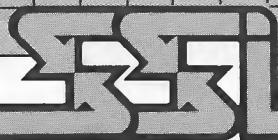
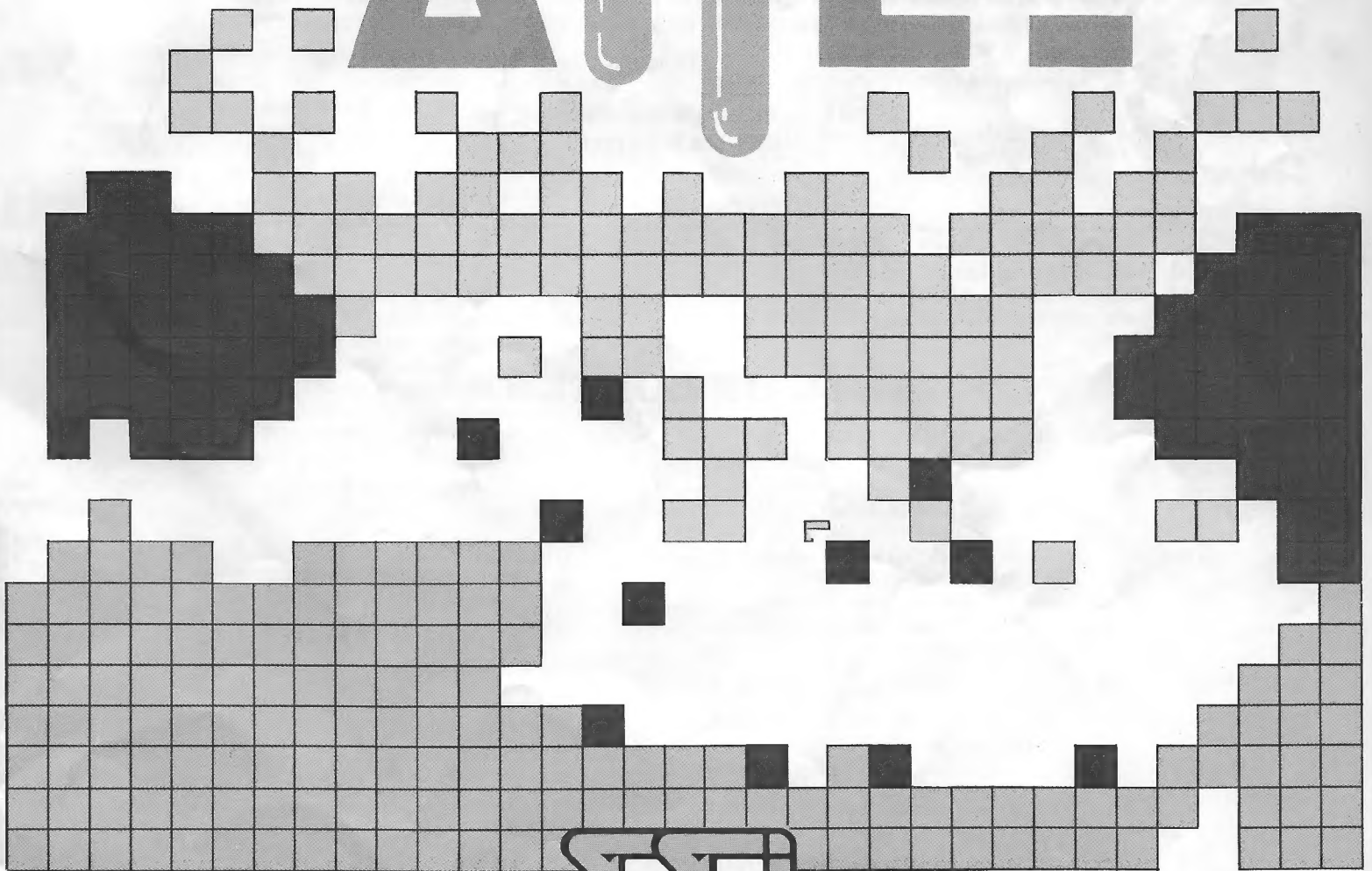


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1.0 INTRODUCTION

BOMB ALLEY is an operational-level game featuring combat between British and Axis air, land, surface-naval and submarine forces for control of the Mediterranean and North Africa in 1942. Every ship, airplane or infantry company available to the local British and Axis commanders in the summer of 1942 are now under your control. You will need to organize your ships into task forces to perform various missions: sea lane interdiction, land bombardment, supply/troop transport, evacuation, etc. All play revolves around the creation and manipulation of these task forces and the effective concentration of air power. Included are a campaign game covering June 11 to August 31, 1942, and minigames covering the invasion of Crete in May 1941 and Operation Pedestal in August 1942.

1.1 Description of Action:

Each game turn represents the passage of 12 hours. A game turn consists of: (1) building and adjusting friendly task forces; (2) moving your task forces; (3) launching air missions during daylight turns; (4) combat resolution.

1.2 Talking to the Computer:

To enter a response to the computer that consists of numbers (such as ship or task force identification numbers or the number of aircraft performing a mission), type the number into the computer and press the **return** key. To select a routine from the Task Force Menu or answer a Yes/No question, just press the desired key. If you wish to halt the game during the combat resolution phase, type **CNTRL-C**. This will cause the program to pause until you press another key.

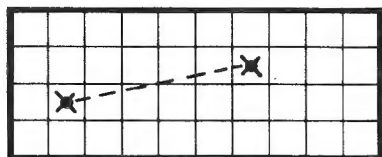
1.3 Saving a Game:

Upon completion of the combat phase of each turn, the computer will allow the player(s) to save the game in progress. You will need a scratch disk to store the saved game data. The disk must be initialized for SSI use by following the instructions included in the game program. Once the game is saved, you will be able to restart it from the point at which you left off.

1.4 The Map:

The map is a 40 × 40-square grid representation of the Mediterranean Theatre. Each square measures 60 miles in width. Land squares are yellow, orange, or green; black squares are ocean; white squares are bases; red squares are British TFs; and blue squares are Axis TFs. The range between squares is calculated between the center of the first square and the center of the second square. The number thus obtained is rounded up.

Example: 5 squares over and 1 square up equals range of 5.099 or 6.



1.5 Starting a Game (DOS 3.2 or 3.3):

To begin a game, boot your game disk and the game will begin automatically. If you are using an Apple II with Pascal, you must first use your BASICS disk. If you are using an Apple III, you must first go into Apple II emulation mode.

2.0 GENERAL DESCRIPTION

2.1 Parts Inventory:

- A. Game Box
- B. Rule Book
- C. 5¼" game disk
- D. Two map data cards

2.2 Passwords:

At the start of a non-solitaire game both sides will be required to enter a password. The password may contain any combination of letters and numbers totalling less than 256 characters. It is important that both sides keep their passwords secret to insure that the computer will give secret information only to the proper side. Some sample passwords are: "AXIS", "1942", and "Q".

2.3 Abbreviations:

Abbreviations used in the game are explained below:

CV	aircraft carrier	DML	minelayer
BB	battleship	MTB	torpedo boat
CA	heavy cruiser	MG	main guns
CL	light cruiser	AA	light guns
CLAA	anti-aircraft cruiser	TT	torpedoes
DD	destroyer	CC	cargo/aircraft capacity
DE	destroyer escort	SU	supply units on board
SS	submarine	IF	infantry units on board
TR	transport	DM	damage percentage
TK	tanker	MS	maximum speed
BBT	old battleship transport	CAP	combat air patrol
DMS	minesweeper	TF	task force

3.0 SEQUENCE OF PLAY

BOMB ALLEY is designed to be a two-sided game: British vs. Axis. The Axis forces must be commanded by a human player. The British forces may be commanded by either a human or the computer.

3.1 Scenario Selection Phase:

During the scenario selection phase, the player(s) select a scenario and determine the conditions under which the game will be played. The set-up may be changed by entering the following numbers:

- (1) New Game or Saved Game
- (2) Color TV or Black & White TV
- (3) Solitaire or two player
- (4) Solitaire level of difficulty (1-4)

The scenario may be altered by entering the following numbers:

- (5) Campaign (June 11 – Aug 31, 1942)
- (6) Pedestal (Aug 10 – Aug 15, 1942)
- (7) Crete (May 20 – May 31, 1941)

3.2 Historical Set-Up:

At the start of each game, the computer will assign all ships, aircraft, infantry and supplies to their historical locations prior to the battle.

3.3 Daytime (AM) Sequence:

- A. Axis TF Adjustment Phase
- B. Axis Movement Phase
- C. British TF Adjustment Phase
- D. British Movement Phase
- E. British Air Operations Phase
- F. Axis Air Operations Phase
- G. Combat Resolution Phase
- H. Save Game Phase

3.4 Nighttime (PM) Sequence:

The PM sequence is the same as the AM sequence except steps E and F are deleted.

3.5 Keep Time:

An AM turn followed by a PM turn equals one day. The calendar is adjusted at the end of the PM turn.

4.0 TASK FORCE ADJUSTMENT PHASE

At the start of the task force adjustment phase, the computer will display a menu listing four options for adjusting your forces and seven options for reviewing the status of your forces. To enter the desired routine, just press the corresponding numbered or lettered key.

4.1 Forming Task Forces:

- A. Enter the code for the port in which you will assemble your TF (I,G,A).
- B. Enter the code for the mission your TF will perform. See Section 9.2 for a list of the possible missions.
- C. The computer will list those ships in the selected port that are *eligible* to perform the selected mission. Each ship will be displayed with its I.D. number.
- D. Assemble your TF by entering the desired ship numbers. In some cases, the screen cannot list all of the eligible ships at once; if you do not see the ships that you want, press **RETURN** and another batch of ships can be listed.
- E. When the computer prompts "**CQNTINUE SELECTION Y/N**", press (**Y**) if you are satisfied with your selection, or press (**N**), and the computer will run through the list again.

4.2 Combining TFs:

Two TFs occupying the same grid location may be combined in the following manner:

- A. Enter the number of the "gaining TF" and the "merging TF".
- B. All ships in the "merging TF" will be added to the "gaining TF" and the "merging TF" will be deleted.
- C. If the "merging TF" had a lower endurance than the "gaining TF", then the "gaining TF" will assume the lower endurance.
- D. Submarine TFs may not combine with non-submarine TFs.

4.3 Dividing TFs:

- A. Enter the number of the TF you wish to divide. The computer will list the ships in the selected TF. A ship with "****" printed after its name is crippled.
- B. The Axis player is allowed 9 active TFs, the British player is allowed 11. If you are currently using the maximum number of TFs, then the computer will display the message "**TOO MANY ACTIVE TFs**" and return to the menu.
- C. Enter the number of the ships you wish to transfer to a new TF. The computer will set up a new TF for you. The new TF will have the same mission and endurance as the original TF.
- D. If you are currently using *fewer* than your maximum number of TFs, then the DIVIDE TF function may be used to "scuttle" crippled ships. Just enter the letter "**S**" following the number of the ship you are transferring. Your opponent will receive one less victory point for ships that are scuttled than would ordinarily be awarded for a ship sunk involuntarily. (Your crew is assumed to have been removed safely.)

4.4 Loading Transports:

Troops and supplies may be loaded onto ships which are located in a friendly port (Italy, Gibraltar, Alexandria).

A. Use the LOAD TRANSPORTS — TRAIN CV PILOTS routine, enter the code for the port in which the loading is to take place. The computer will list all *eligible* ships in that port with a cargo capacity greater than zero.

B. Enter the number of the ship you wish to load and then enter the number of infantry companies and/or supply units you wish to load. Each infantry company represents 100 men.

C. If you wish to unload cargo while still in port, type a "**U**" in response to the question "number of infantry companies/supply units to be loaded?" By typing a "**U**" the current cargo will be unloaded.

D. Only supply units may be loaded into tanker (TK) type ships.

4.5 Training Carrier Pilots

To replace losses for depleted carrier air groups, land based aircraft (pilots) must be trained for carrier operations.

A. Use the LOAD TRANSPORTS — TRAIN CV PILOTS routine. Select the code for the port that is furnishing the aircraft for training. The carrier must already be assigned to this port.

B. Enter the number of the carrier that is to receive the aircraft.

C. The computer will list all of the *eligible* aircraft available in the port. Enter the quantity you wish to transfer.

D. The carrier will be taken out of circulation for two days while the "training" is being accomplished.

4.6 Checking the Pipeline:

Reinforcements and repaired ships will periodically be sent to ports you control. To check the status of these ships, you may wish to request the current condition of your ship "pipeline".

A. Enter the code (I,G,A) for the port you wish to check.

B. The computer will list all ships currently in that port and all ships due to arrive there.

C. For ships in the repair, refit or reinforcement "pipeline", the computer will list the time in days before that ship can return or arrive.

4.7 Sunk Ships Display:

The computer will list all ships that have been sunk and the points awarded for their sinking.

4.8 Air Group Display:

The computer will display the number of each type of aircraft assigned to each friendly airbase or carrier that is active.

4.9 List Active TFs:

A. The computer lists the TF number, mission, and endurance for each friendly TF currently active.

B. The computer will prompt "**ENTER TF NUMBERS.**" If you wish to examine the ships in a particular TF, enter the TF number and **return**. If you do not wish to examine a TF just press **return**.

4.10 Map Display:

The computer will display the map and all friendly active TFs. If you wish to locate a particular friendly TF on the map, enter that TF's number. The TF's square will flash to indicate its location.

4.11 Malta Status Display:

The computer will display the number of troops and supply dumps you control on Malta.

4.12 Base Display:

A. The computer will display the infantry companies, supply dumps, fighters, and bombers available at each friendly base.

B. The computer will prompt "**REINFORCE AFRIKA CORP Y/N**" or "**REINFORCE EIGHTH ARMY Y/N**".

C. If you press (**Y**), the computer will ask which African base you wish to use as a reinforcement source. Enter the desired base code.

D. The computer will ask you how many infantry companies,

supply dumps, and aircraft of each type you wish to transfer. To transfer from the base to the front lines, enter a positive number. To transfer from the front back to the base, enter a negative number. If you do not wish to transfer a particular item, just press **(RETURN)**.

E. When listing aircraft transfers, the computer will display two numbers, separated by a colon. The first number is the quantity of the aircraft type at the source base. The second number is the quantity of the aircraft type at the front.

F. When transferring supplies from a base to the front, part of the quantity transferred will be "consumed" in transit. The percentage consumed will be equal to the distance from the base to the front divided by 100.

4.13 Ending the Game:

Both players should agree before ending the game. The computer will display the final score.

5.0 TASK FORCE MOVEMENT

TFs move by expending movement points. The number of movement points a TF is allowed is dependent on the TF's "fleet speed".

5.1 Fleet Speed:

A. A TF's fleet speed is calculated as 25 knots or the speed of the slowest ship in the TF, whichever is lower.

B. The speed of a TF assigned a "T", "E" or "ES" mission (see 9.2) will be 30 knots or the speed of the slowest ship in the TF, whichever is lower.

5.2 Movement:

A. A TF receives one movement point for each 2½ knots of fleet speed. A TF will receive a *minimum* of three movement points.

B. A TF expends two movement points for each square moved in directions N, S, E, W.

C. A TF expends three movement points for each square moved in directions NW, NE, SW, SE.

D. A TF with fewer than two points remaining in its move, may not move any further, but it may still "dock."

E. If you accidentally press the wrong key while moving, you may press the **(A)** abort key and start your move over. This may not be done after you have docked a TF.

F. A TF may never enter a land square. A TF may move freely through any other square.

5.3 Entering Harbor — Unloading Ships:

A. A TF that *begins* its move on a friendly base square may enter the harbor and unload cargo by pressing **(9)** for "dock". If a TF begins its turn in harbor and wishes to remain there, the player must press **(9)**. If a TF begins its turn in harbor and wishes to exit the harbor while remaining on the base square, the player should press **(0)**.

B. Each ship may unload a maximum of six infantry companies or three supply units or an equivalent combination of infantry and supply. Tankers may unload a maximum of 6 supply points per turn.

C. While "in harbor" a TF may never be attacked by enemy ships or submarines.

D. While "in harbor" a TF's ships are more vulnerable to air attack; bomber accuracy is doubled when attacking ships "in harbor".

E. Axis ships may unload on Malta (amphibious assault). Follow the procedure in A above. Ships will unload infantry/supplies at a rate of 4/2 instead of 6/3. Tankers will unload 2 supplies per turn. When assaulting Malta, Axis ships will never enter the harbor.

F. Once Axis forces have captured Malta no British troops or supplies may be unloaded on Malta.

5.4 Movement Sequence:

A. During the movement phase, TFs must be moved sequentially according to TF number. Once a TF has completed its move, the

action cannot be reversed.

B. A player may examine the ships in a TF at any time during the TF's movement segment. Press the **(S)** ships key and the computer will give a complete status display for each ship in the TF. The column heads for the display are explained in section 2.3.

6.0 PLANNING LAND ATTACKS

During the AM turns, the computer will display the number of troops and supplies available on your African Front, and will ask the question **"DO YOU WISH TO ATTACK Y/N"**.

A. Enter the level of your attack **(0-5)**; zero means no attack.

B. A level 1 attack is a reconnaissance in force and consumes one supply dump. A level 5 attack is an all-out Blitz and will consume five supply dumps, etc.

C. If you wish to avoid combat, enter **(R)** for retreat; the front will shift one square (60 miles) away from the enemy. Combat may still occur if the British retreat and the Axis employs a level 5 attack.

7.0 AIR OPERATIONS

During the Air Operations Phase, a player may (1) launch CAP and search aircraft, (2) observe search results, (3) launch air strikes, (4) transfer aircraft.

7.1 CAP and Search Missions:

A. At the start of each Air Operations Phase, each player must determine how many of his fighters will fly CAP missions and how many of his bombers will fly search missions. Aircraft performing CAP or search may not participate in air strikes or transfers during that turn.

B. Fighters may fly two types of CAP missions: (1) normal CAP, and (2) long-range CAP. Normal CAP will protect *only* the TF or airbase from which it originated. Long-range CAP will protect any friendly TF within a five square range of the launching base or carrier. CAP will never protect a friendly submarine task force. Only a fraction of an air group performing long-range CAP will intercept an enemy air strike (the greater the distance between the CAP's home base and the airstrike target, the smaller the fraction). The percentage of planes intercepting is as follows:

Range to Target	% of CAP Intercepting
0	76
1	43
2	30
3	23
4	18
5	15

C. Bombers may fly two types of search missions: (1) normal search, (2) submarine search. Normal search missions can detect only enemy surface TFs. Submarine search missions can detect only enemy submarines.

D. Each active airbase is equipped with ten float planes which automatically fly normal search missions every AM turn. These planes fly independently (not in conjunction with searching bombers from the same airbase). These float planes may never be destroyed.

E. Search ranges for aircraft are listed below:

SWORDFISH	12	SM79	20	JU88	20
BEAUFORT	20	DO17	20	JU87	10
FLOAT PLANE	20				

Range is calculated as shown in section 1.4.

F. The maximum search range of a base or TF is equal to the search range of the lowest-range search plane.

7.2 Launching Air Strikes:

Enemy bases and enemy TFs sighted on the search results

display may be attacked by available friendly aircraft within range.

A. The computer will request a target for each friendly active airbase/carrier. Type in the ID number of the enemy TF/base you wish to attack. The computer will list the range to the target and ask you how many of each type of aircraft you want to launch. The computer will not allow you to attack unsighted enemy TFs. A player may launch a maximum of 20 airstrikes per AM turn. Within this restriction there is no limit to the number of strikes that may be launched from a friendly carrier or airbase, or the number of strikes that may be launched against a single enemy TF or base. The first airstrike launched from a base will consume 1 supply dump; subsequent strikes launched from that base will not consume supplies. The maximum range of an anti-ship airstrike is eight spaces.

B. The following bases may be attacked by typing in the target numbers listed below:

GIBRALTAR	1	ITALY	16	TRIPOLI	20
ALEXANDRIA	2	SICILY	17	BENGHAZI	21
MALTA	3	SARDINIA	18	ATHENS	16
TOBRUK	4	CRETE	19	MOLAOI	17

C. The attack ranges for aircraft are listed below:

SPITFIRE	5	SM79	10	DO17	10
FULMAR	6	JU88	12	JU52	12
ME109	5	JU87	5		
SWORDFISH	6	BEAUFORT	12		

D. Spitfire, Fulmar, and ME109 aircraft may be included in airstrikes, but they may never attack enemy surface or submarine targets. They function as escorts to protect the bombers and shoot down enemy CAP.

7.3 Aircraft Transfers:

Aircraft may be transferred between airbases and/or carriers with the following restrictions:

A. Only two air transfer missions may be performed each AM turn.

B. Aircraft may never transfer from an airbase to a carrier. (This requires pilot training, see paragraph 4.5).

C. For transfer purposes, aircraft have their range tripled.

7.4 Air Transport Operations:

The Axis player may transport troops or supplies between friendly airbases by using the JU52 transport aircraft.

A. Whenever the JU52 aircraft is included in an air transfer mission (see 7.4), the computer will ask "**TRANSPORT TROOPS OR SUPPLIES T/S**". Press (T) to transport infantry; press (S) to transport supplies; press (RETURN) if you do not wish to transport any cargo.

B. If the transfer range is less than five, then each JU52 may transport one infantry or 1/6 of a supply unit. If the transfer range is greater than or equal to five, then each JU52 may transport 1/10 of an infantry company or 1/60 of a supply unit.

7.5 Airborne Assault:

A. An Axis airborne assault will occur the *first* time during the game in which Sicily-based JU52s are included in an airstrike against Malta. Each JU52 included in the strike will attempt to transfer one infantry company from Sicily to Malta. If a JU52 is destroyed by a CAP or AA-fire, an infantry company is also destroyed.

B. An airborne assault may only occur once during the game, after which JU52s may not be included in airstrikes.

7.6 Fighter Effectiveness:

The law of diminishing returns applies to both air combat over North Africa and CAP interceptors. That is, the effectiveness of each additional fighter will decrease as the total fighters used increases.

8.0 COMBAT RESOLUTION

During the combat resolution phase, the computer will automatically perform the following functions:

- (1) Air Combat over Africa
- (2) Air Strike Resolution

(3) Surface and Submarine Combat Resolution

(4) Return aircraft to their bases/carriers

(5) Resolve land combat

(6) Repair & Refit of ships

(7) Activate reinforcements

8.1 Air Combat over Africa:

Each AM turn, the Eighth Army-based aircraft will exchange blows with the Afrika Corps-based aircraft. This occurs using the following sequence:

A. Each Afrika Corps ME109 will engage an Eighth Army fighter/bomber. The type of aircraft engaged is determined randomly.

B. Each Eighth Army Spitfire will engage an Afrika Corps fighter or bomber. The type of aircraft engaged is determined randomly.

C. Afrika Corps and Eighth Army *bombers* that survive air combat over Africa will perform ground support missions during the subsequent land combat phase.

D. In Air Combat over Africa the ME109 will enjoy a slight tactical advantage over the Spitfire (will shoot down enemy aircraft better).

8.1.1 Air Combat Over Malta:

Air combat over Malta occurs each AM turn in which Axis troops have a foothold on Malta.

A. Air combat will follow the sequence listed below:

(1) Sicily-based long-range CAP will attack Malta-based bombers and fighters available for ground support missions.

(2) Malta-based long-range CAP will attack Sicily-based bombers and fighters available for ground support missions.

8.2 Air Strike Resolution:

Each air strike is resolved in three segments:

(1) CAP resolution; (2) Flak resolution; (3) Bomb or torpedo-hit resolution.

A. Before an air strike group can attack an enemy TF or base it must first survive the onslaught of each CAP fighter group protecting the target. Individual CAP fighters will randomly select a bomber or escort fighter target and attack it. If the attack fails to shoot down the target aircraft, then the target aircraft will counterattack. This sequence is repeated for each participating CAP fighter.

B. An example of CAP target selection is as follows:

If an air strike has 10 escort fighters and 20 bombers, then each CAP fighter will have a 33% chance of selecting an escort fighter for a target and a 67% chance of selecting a bomber for a target.

C. The following table shows the chances for a CAP fighter to destroy each type of aircraft and the chances of a counterattack destroying the CAP fighter:

	Aircraft Shot Down	Aircraft Shoots Down CAP Fighter
ME109	18%	22%
SPITFIRE	18%	22%
FULMAR	18%	22%
SWORDFISH	39%	1%
BEAUFORT	32%	8%
SM79	32%	8%
JU88	32%	8%
JU87	39%	1%
DO17	32%	8%
JU52	39%	1%
BOSTON	32%	8%

The odds for fighter vs. fighter combat may be changed in situations where the CAP fighters greatly outnumber the escort fighters. The CAP kill percentage may be increased up to 25% and the escorts' kill percentage reduced to as low as 15%. The following aircraft are fighters: ME109, SPITFIRE AND FULMAR.

D. Each bomber that survives CAP combat will select a target ship from those in the target TF and attempt to penetrate the TF's flak and deliver its ordnance. Target selection is accomplished in the

following manner: each ship is assigned a selection value (SV) equal to its defense factor plus five times its cargo/aircraft capacity; the chance of a particular ship being attacked is equal to the SV of that ship divided by the combined SV of the target TF.

E. The chance of a bomber being shot down by flak is equal to the TF flak strength, divided by 500. The TF flak strength is equal to the combined AA ratings of all ships in the TF. If there are more than 12 ships in the TF, then the TF flak strength is equal to the *average* AA ratings of the ships in the TF times 12.

F. The chance of a bomber hitting its targets is affected by: (1) bomber accuracy, (2) maximum speed of target, (3) flak intensity, (4) range of the strike, (5) size of the target. The relative accuracy of each bomber is listed below:

DO17	1	JU88	2	SWORDFISH	4*
SM79	1*	BEAUFORT	2*	JU87	4

* indicates torpedo ordnance

All bombers are equally accurate when attacking enemy bases. Air strikes against bases can only destroy parked aircraft or supply dumps.

G. The first air strike on any particular submarine will cause the submarine to submerge. The act of submerging will protect the submarine from further air attacks during that turn.

8.3 Surface Combat Resolution:

Surface combat may occur between opposing TFs that occupy the same space if at least one of the TFs is performing a combat patrol mission (C) and has an endurance of at least 9.

A. Surface combat is resolved using the following sequence:

(1) each British ship in a TF performing a "C" mission will fire at one of the ships from one of the Axis TFs in the same space; (2) each Axis ship that occupies the same space as the attacking British TF will fire at one of the ships from the attacking TF; (3) each Axis ship in a TF, performing a "C" mission will fire at one of the ships from any British TF that occupies the same space; (4) each British ship that occupies the same space as the attacking Axis TF will fire at one of the ships from the attacking TF.

B. Target selection for surface combat is similar to that used for air attacks. In surface combat, a ship's selection value is equal to that ship's defense factor.

C. When attacking, each ship will (1) fire torpedoes, (2) fire main guns, (3) fire secondary guns. Ships carrying 12 or more torpedoes will fire *half* of them at the target. Ships carrying less than 12 torpedoes will fire *all* of them at the target.

D. The accuracy of gunfire and torpedoes is adjusted according to the speed and size of the target. Axis ships will suffer a major disadvantage in surface combat that occurs at night. There is a 67% chance that an Axis ship will fail to locate a target at night. This rule does not apply to Axis MTBs.

E. The following restrictions apply during daylight surface combat: (1) AA guns will not fire at ships with main guns; (2) torpedoes will only be fired at crippled ships. MTB's will fire torpedoes normally.

F. TRs, TKs, and CV type ships will never fire during surface combat. A ship that picks a carrier as its target will only fire if it has a speed greater than the carrier.

G. A TF performing an "MT" (Motor Torpedo Boat) mission will perform exactly like a TF performing a "C" mission, *except* that an "MT" TF may initiate combat regardless of its endurance.

H. MTBs have their torpedo accuracy *doubled* at night. MTBs may only be damaged by enemy gunfire. (Enemy aircraft will employ strafing instead of bombs or torpedoes).

I. On PM turns, MTBs selected as targets will have a 50% chance of evading the attack (the attacker ship will not fire).

J. Combat ships (BB, CA, CL, DD, DE, DMS, DML) that are loaded with supplies will have their surface combat efficiency reduced. There is a 50% chance that loaded combat ships will be unable to fire at a target during surface combat.

8.4 Submarine Combat:

A. Submarines patrol an area up to *two* spaces away from their

actual TF location.

B. Each sub in a TF will have about a 12% chance of attacking an enemy surface TF within its patrol area. (Italian subs have a 1% chance.) Each sub in a TF will have less than 1% chance of attacking an enemy sub TF within its patrol area.

C. The chance of engaging and torpedoing an enemy ship will be reduced by the number of escorts (DD, DMS, DML, DE) present in the defending TF.

D. A sub that has been sighted by enemy sub search will have its chance for successful attack reduced and its chance of being sunk by "depth charge" increased.

E. When attacking, submarines will fire a salvo of 4 torpedoes, or all of their remaining torpedoes, whichever is less.

F. Italian submarine torpedoes will be only half as effective as British and German torpedoes.

G. After a submarine launches an attack, escorts in the opposing TF will attempt to locate and depth charge the sub. Each escort in the TF has a 15% chance of locating the sub for Italian escorts and a 30% chance of locating the sub for British escorts. Escorts that locate the sub have a 1% chance of sinking it.

8.5 Aircraft Returning to Base:

A. After completing their missions, aircraft will attempt to return to the same base or carrier from which they were launched.

B. If launched from a carrier which received a 26% or more damage or had its speed reduced below 15 knots, the aircraft will try to make an "emergency" landing on another carrier or airbase.

C. Emergency landings will occur automatically if there is a friendly base or carrier within 3 squares of the origin carrier.

D. If an emergency landing is required and there are no eligible bases or carriers within 3 squares, then the aircraft will ditch in the ocean.

8.6 Land Combat:

Land combat is automatic when Axis forces are present on Malta. Land combat in North Africa must be planned at the end of the previous Movement Phase.

A. When Axis forces are present on Malta, they will automatically launch a level 5 attack against the British Malta Garrison. The Axis force will consume 5 supply units in this attack, and the British force will consume 1 supply unit. If the Axis force does not have the required supply units for this level of attack, then Axis casualties will be *doubled*. If the British force does not have the required supply unit, then the British defensive fire will be normal. Due to fortifications, British troops on Malta will suffer only ¼ casualties. The British garrison may surrender if it is attacked (but do not expect this to happen until the British are greatly reduced in strength).

B. Land attack procedure is as follows: (1) defender forces open fire, inflicting casualties on the attacker; (2) surviving attacker forces inflict casualties on the defender.

C. As a general rule, the greater the attack level (1-5), the greater the casualties on both sides. Attacks made without adequate supplies will suffer *doubled* casualties. Defensive fire from an unsupplied force will be *half* as effective.

D. In North Africa, Axis-controlled areas are colored yellow, British-controlled areas are colored orange. The "front line" is the junction of the yellow and orange areas. The front line will shift east or west depending on the outcome of land combat in Africa. When the front line touches the Qattar Depression, British defensive fire will be increased by 50%. German defensive fire is always increased by 50% in North Africa.

E. British forces will automatically capture Benghazi when the front line advances to the west of that base. The British may never use Benghazi as a base, but the Axis will be denied its use until the front line is pushed back to the east of that base.

F. Axis forces will lay siege to Tobruk when the front line advances to the east of that base. When this state of "siege" exists, all Afrika Corps attacks will be directed against the Tobruk Garrison instead of the Eighth Army. If the Tobruk Garrison is reduced to zero, then

the Axis will capture Tobruk and its supplies, and the British will be denied its use as a base. The Axis may not garrison Tobruk or use it as a base. The British will automatically recapture Tobruk if the front line is pushed to the west of that base. Any Axis attack on Tobruk may result in the Garrison's immediate "surrender." The surrender odds are determined by the ferocity of the Axis attack compared to the strength of the Garrison.

G. The British Malta Garrison may have enhanced defensive fire depending on their supply status. For each supply unit on Malta the effectiveness of their defensive fire will increase 20% up to a maximum of 300%.

8.7 Ground Support and Bombardment:

The outcome of land combat may be affected by bombers performing ground support missions and ships performing bombardment (B) missions.

A. Bombers will perform ground support missions under the following circumstances: (1) bombers attached to the Eighth Army or Afrika Corps will automatically perform ground support for their respective armies; (2) Tobruk-based bombers may perform ground support when Tobruk is under siege; (3) Malta-based bombers may perform ground support for British Forces when combat occurs on Malta; (4) Sicily-based bombers may perform ground support for Axis forces when combat occurs on Malta; (5) ground support bombers may not perform search, strike, or transfer missions during the turn in which the ground support is provided.

B. Ships in TFs with "B" missions will provide bombardment support for friendly forces on Malta when they occupy the Malta square.

C. Bombardment points have the same effect as ground support points. Each bomber provides 1 ground support point; Battleship main guns are worth 5 bombardment points *each*; Cruiser main guns are worth 1 bombardment point *each*, all AA guns are worth ½ bombardment point *each*. A ship with 5% or more damage will not provide bombardment support.

D. Bombardment/Ground Support has the following effect on Land Combat: (1) each B/GS point will "suppress", on the average, 5 companies worth of enemy defensive/offensive fire; (2) each B/GS point will add, on the average, 2½ companies worth of friendly offensive/defensive fire.

E. The Afrika Korps or Eighth Army may never receive ground support benefits on turns during which their supplies are inadequate for full offensive or defensive fire. The Afrika Korps and Eighth Army are limited in the number of bombers that may provide ground support. The maximum support allowed each turn is equal to 3 × SUPPLY POINTS AVAILABLE TO ARMY. Thus, if the Afrika Korps has 50 supplies they will only use up to 150 bombers as ground support (planes over the limit are considered to have remained on their airfields).

F. British bombers in the 8th army will provide ground support at 50% of normal effectiveness.

G. Axis ground support and bombardment provided for troops on Malta will act at 25% effectiveness for the purposes of suppressing British defensive fire (normal effectiveness in attack capabilities).

8.8 Advance After Combat:

A. Following an Axis attack in North Africa, the front line will "advance" one space to the east if the Axis total combat strength (TCS) is *greater* than the British TCS in North Africa. Attacker TCS is computed as follows:

$(\text{INF COMPANIES} + \text{GROUND SUPPORT POINTS} \times 2) \times \text{ATTACK LEVEL}$

Defender TCS is: $(\text{INF COMPANIES} + \text{GROUND SUPPORT POINTS} \times 2) \times 3$.

B. Following a British attack in North Africa, the front line will "advance" one space to the west if the British TCS is *double* or more the Axis TCS.

C. Advance after combat will only occur following a level 4 or level 5 attack. Advance after combat will not occur following an inadequately supplied attack.

D. The Qattar Depression is displayed on the map as a brown patch located between Alexandria and Tobruk. When the front line touches the Qattar Depression, the following will occur: (1) to advance after combat, the attacking Axis TCS must be *double* or more the British TCS; (2) the effects of British defensive fire will be doubled.

8.9 Repair and Refit of Ships:

A. Damaged ships which docked during the previous movement phase are placed in the Repair Pipeline. Undamaged CV, BB, TR, and SS type ships will be placed in the Refit Pipeline. Damaged CV, BB, TR, TK, and SS type ships must complete both Repair and Refit Pipeline functions before they can be reactivated. Refit time is four days. A TF that docks with an endurance remaining greater than 30 will not be required to refit. Transports and tankers must always refit.

B. Undamaged ships (other than those mentioned in paragraph A) which docked during the previous movement phase, do NOT require Refit. These ships may be placed in a TF with a full endurance during the next TF adjustment phase.

C. The average number of turns needed for repair is equal to $9 \times \text{damage points suffered}$. The number of damage points suffered is equal to the ship's defense factor \times damage percentage. Repair time for a ship may be doubled with smaller ships having a greater chance of lengthened repair time. (There is a 71% chance that an average DD's repair time will be doubled while an Italian BB has only a 6% chance of requiring double repair time.)

8.10 Reinforcement Arrival:

Ship reinforcements will arrive on a day-to-day basis as scheduled on the pipeline display. Infantry, supply, and aircraft reinforcements will be as follows:

Option	Location	Inf Co	Supply	Spitfire
(1)	Gibraltar	5	20	12
(2)	Alexandria	45	30	18
Option	Location	Swordfish	Beaufort	Boston
(1)	Gibraltar	0	3	0
(2)	Alexandria	0	0	18
Option	Location	Inf Co	Supply	ME109
(3)	Italy	10	25	9
(4)	Italy	0	20	9
Option	Location	SM79	JU88	JU87
(3)	Italy	0	6	3
(4)	Italy	6	0	0

A. Each turn there is a 1/8 chance of arrival for *each* of the above-listed reinforcement options.

B. Boston Bombers arrive attached to the Eighth Army.

C. There is a 50% chance that the Pedestal Convoy reinforcements will become available to the British player earlier than they were historically (August 10th). If they arrive earlier, then the Axis player will receive 2 points for each day of earlier arrival. This rule applies only to the Campaign game.

D. During the first week of the Campaign game the British are more likely to receive reinforcements in Alexandria than they are later on. During the second and third weeks of July the Germans are more likely to receive reinforcements in Italy.

9.0 GENERAL OPERATIONS

9.1 Damage to Ships:

Ships accrue damage "points" when they are hit by bombs, torpedoes or gunfire. When the total damage points are greater than or equal to a ship's defensive factor (DF), that ship will sink. When total damage points are greater than or equal to 50% of a ship's DF, that ship is "crippled."

A. A table listing the average damage points caused by each type of

a critical hit. The message **"EXPLOSION ON BOARD ..."** reveals that a critical hit has been scored.

D. CV class ships with 26% or more damage or maximum speed less than 15 knots may not launch or land aircraft. *Note: This means that carriers in TFs reduced to 5 knots due to zero endurance will not be able to launch aircraft.*

E. Crippled ships may accrue additional damage while returning to port. Major additional damage will be shown by the message **"EXPLOSION ON BOARD ..."** It is also possible for a ship to repair itself while at sea. Repairs will be attempted until a ship is no longer *crippled*.

9.2 TF Missions:

Listed below are the missions that may be assigned to a TF and the endurance allowed for each mission:

Mission	Endurance
C — Combat Patrol	40 turns (20 days)
B — Bombardment	40 turns
T — Transport	40 turns
E — Evacuation	40 turns
ES — Emergency Supply	40 turns
U — Submarine	60 turns
MT — Motor Torpedo Boat	6 turns
R — Return	NA

A. CV type ships may only perform "C" missions.

B. TR type ships may only perform "T" missions or "E" missions.

C. SS type ships may only perform "U" missions.

D. MTB type ships may only perform "MT" missions.

E. Only TFs with "C" or "MT" missions may initiate surface combat. A TF with a "C" mission may only initiate combat if its endurance is greater than 8.

F. Surface combat may cause a Bombardment (B) TF to abort its mission. Aborted bombardment TFs will have their mission changed to "R".

G. An evacuation (E) TF that loads troops during the movement phase will have its mission changed to "T". It may then unload these troops at any base. *(Note: To load troops, an evacuation TF must begin its move on a friendly base square — press (9) to dock and all transports in the TF will automatically load friendly troops up to their capacity.)*

H. All ships present in an evacuation TF will have the capacity to transport troops. Any ship with a cargo capacity of zero will have its capacity increased at the moment it is placed in the "E" TF (in-port only). The adjusted cargo capacity will be equal to the ship's DF divided by 6 (fractions dropped).

I. Emergency Supply missions may only be performed by ships with a speed of at least 25 knots and a DF of at least 6. Ships included in an ES mission will be automatically loaded with supply units. Ships that normally have a capacity of zero will instead have a capacity equal to their DF divided by 6 for ES missions only. Ships in an ES mission will only load up 1/5 of a supply point per supply capacity. When the ships unload they will only unload 1/5 of a supply point per point listed as its capacity. *Example: One CL with a DF of 23 and 4 DD's with a DF of 7 form an ES mission. They will load (and unload) a total of 2 supplies ((3+1+1+1+1)/5 rounded up), although the ships will show that they are carrying 7 supplies. ES missions may not combine with non-ES missions.*

9.3 TF Endurance:

A. A TF's endurance is reduced by one for each turn that it spends at sea. A TF that ends its move in a harbor will not have endurance reduced.

B. A TF's endurance is reduced to 15 if the TF is attacked by enemy bombers. If the endurance is already less than 15, then it is unaffected. Transport and Evacuation TFs will never be reduced.

C. A carrier TF's endurance will be reduced by 5% for each airstrike that it launches.

D. A Bombardment TF will have its endurance reduced by 10% for each turn that it provides bombardment support. If the endurance falls below 9 due to this reduction then the TF's mission will be changed to "R". A bombardment group with endurance less than 9 may not provide bombardment support.

E. Surface Combat reduces endurance as follows: The attacking TF's endurance is reduced to 8 (if currently greater than 8) if the defending TF's combined defensive factors multiplied by a random number between 0 and 1 is greater than 25. The defending TF's endurance is reduced to 8 (if currently greater than 8) if the total attacker main guns multiplied by a random number between 0 and 1 is greater than 15. For these purposes, the MG of a battleship is multiplied by 4 (battleships will tend to scare off enemy TFs).

F. If a TF's endurance reaches zero and it fails to dock during that turn, then all of its ships will have their maximum speed reduced to 5 knots.

G. Subs with zero endurance may not fire torpedoes.

9.4 Supply:

Supply units are used for: (1) Infantry daily supply; (2) land combat; (3) forming TFs; (4) performing air missions.

A. Bases and front line armies must spend daily supplies to maintain their troops. The daily supply cost for each base or army is equal to the number of infantry companies divided by 150, fractions rounded up. *EXAMPLE: An army of 330 infantry companies must have 3 supply units for daily supply (330/150 = 2.2, rounded up to 3).* Bases or armies that have supply levels inadequate to meet daily supply requirements will lose 1% of their infantry strength per day, fractions rounded up. Gibraltar, Alexandria, Italy and Sicily are exempted from daily supply requirements.

B. Supplies are consumed in land combat. Land combat on Malta will consume 5 Axis supply dumps and 1 British supply dump. Attacker forces in North Africa will consume 1 supply dump for each level of attack while defender forces will consume 1 supply dump regardless of the attack level. Attacker casualties will be *doubled* when there is inadequate supply for the level of attack. Defensive fire will be *halved* if the defending force does not have the required supply unit.

C. The major ports (Italy, Gibraltar and Alexandria) must have adequate supplies to form ships into TFs. The cost of placing a ship in a TF is equal to 1/5 of that ship's DF (fractions rounded down).

Thus, an Italian Battleship requires 16 supply points ($81/5 = 16.2 = 16$) and a MTB requires 0 supply points ($2/5 = .4 = 0$). If a port runs out of supply points as you are forming a TF, then you will not be allowed to place any more ships in that TF.

D. A TF that returns to port with an endurance greater than 20 will return its unused "fuel" to the port. The quantity of fuel (supply) returned is equal to each ship's DF divided by 10 (fractions rounded down).

E. Airbases consume 1 supply point for each airstrike launched. CAP, search and transfer missions do not *consume* supply points. If a base's supply level falls below 3, then no air operations will be permitted from that base.

9.5 Scoring:

A. Players receive victory points (VPs) for sinking enemy ships equal to that ship's Defense Factor plus its cargo/aircraft capacity. Players receive 1 VP for each damage point inflicted on an enemy ship at sea at the end of the game. Players also receive 1 VP for each *week* a ship is out of action at the end of the game. However, they do not receive points for the first one week that a ship is out of action at the end of a game. (This allows time for refitting as opposed to repair time.) In campaigns that end before August 10, no victory points will be awarded for damaged ships in the pipeline.

B. The British Player received 1 VP for each infantry company in the Eighth Army or Tobruk at the end of the game. The Axis Player receives 1 VP for each infantry company in the Afrika Corps at the

weapon is shown below:

Light (AA) gun	.5
CL main gun	1
CA main gun	2
BB main gun	7
Bomb	3
Torpedo	5

B. Torpedo hits will reduce a ship's maximum speed by at least 5 knots.

C. Whenever a ship is hit, it may suffer additional damage due to end of the game.

C. The players receive VPs for possession of geographical objectives. The British Player receives points for controlling the following:
MALTA — 500 ALEXANDRIA — 500 TOBRUK — 500
TRIPOLI — 500

The Axis player receives points for controlling the following:
ALEXANDRIA — 1000 MALTA — 200 TOBRUK — 200

D. The game ends immediately if the Axis player captures Alexandria. The game will end immediately if the British player captures Tripoli. The game will automatically end after the August 31 PM turn.

E. The current score is summarized at the beginning of each turn.

F. Subtract British VPs from the Axis VPs and compare the results to the following table to determine the victor:

1000 and up	Axis Decisive Victory
500 to 999	Axis Substantive Victory
100 to 499	Axis Marginal Victory
-99 to 99	Draw
-499 to -100	British Marginal Victory
-999 to -500	British Substantive Victory
-1000 and less	British Decisive Victory

9.6 Weather:

There are three levels of weather: clear, partly cloudy, and cloudy. The weather will be cloudy at the start of the campaign.

A. Weather will influence the ability to spot enemy TFs at ranges greater than 1.5. The chance of spotting TFs at ranges over 1.5 is reduced by 1/3 during partly cloudy and 2/3 during cloudy weather.

B. There is a random chance each turn that the weather will change. The weather is graduated such that in any one turn the weather should *not* change from clear to cloudy; it would have to change to partly cloudy before it could become cloudy. The weather can change a maximum of one level per turn.

C. There is a chance that airstrikes against enemy shipping will fail to locate their targets. Listed below are the "failure to locate" chances for each range and weather type:

	Range						
	2	3	4	5	6	7	8
Clear	4	6	8	10	12	14	16
Partly Cloudy	10	15	20	25	30	35	40
Cloudy	16	24	32	40	48	56	64

9.7 Airbase Capacity:

The maximum aircraft capacity for each airbase is listed below:

Gibraltar	500	Italy	500
Alexandria	500	Sicily	500
Tobruk	200	Sardinia	500
Malta	300	Crete	500
Tripoli	500	Benghazi	100

A. The JU52s are ignored when computing the maximum allowed at an airbase.

10.0 MINI-GAMES

BOMB ALLEY includes 2 mini-games: Pedestal and Crete. Due to their limited scope, each mini-game includes some special rules and restrictions.

10.1 Pedestal Exclusive Rules:

Rules for the Pedestal mini-game are the same as those for the Campaign, with the following exceptions:

A. Scoring: In addition to the scoring outlined in section 9.5 (*Exception*: No points are awarded for possession of geographical objectives), the British player receives 10 VPs for each supply unit on Malta at the end of the game. The Axis player receives 5 VPs for each supply unit controlled by the Afrika Corps and 1 VP for each supply unit in Italy at the end of the game. Players do not receive points for geographical objectives in the Pedestal mini-game. Also, all VPs scored are doubled after the conclusion of the game. Each player receives 1 victory point per plane remaining at the end of the game (not including JU52 aircraft).

B. The weather is clear at the start of the game.

10.2 Crete Exclusive Rules:

Rules for the Crete mini-game are the same as the rules for the Campaign, with the following exceptions:

A. The Axis player may only form new TFs or dock TFs in Athens. The Axis player may operate aircraft from Athens (capacity = 500) and Molaoi (capacity = 500). **The British airbase on Crete is #3. The British Airbase on Malta is #1.** The Axis player may operate aircraft from Crete only after the Axis forces have captured an airfield on that island.

B. An airborne assault will occur the *first* time during the game in which Molaoi-based JU52s are included in an airstrike against Crete. All rules discussed in section 7.6 apply here — simply change Sicily to mean Molaoi and Malta to mean Crete.

C. The Axis forces will capture an airfield on Crete if following the land combat phase the Axis Total Combat Strength (TCS) on Crete is greater than the British TCS. For this scenario the Axis TCS is equal to INF COMPANIES + GROUND SUPPORT POINTS × RANDOM NUMBER (between 0 and 1); the British TCS is equal to INF COMPANIES + GROUND SUPPORT POINTS × RANDOM NUMBER + SUPPLY UNITS.

D. The British forces may recapture an Axis-held airfield if following the land combat phase the British TCS is *ten* or more times greater than the Axis TCS.

E. If Axis forces begin a land combat phase on Crete, they must attack the British Garrison. The Axis player will consume 5 supply units in this attack, the British player will consume 1 supply unit. (see section 8.6 C for the effects of inadequate supply).

F. Scoring: Points awarded for sinking or damaging ships are the same as in section 9.5 A. If the Axis player controls an airfield on Crete at the end of the game, then "Strategic Points" are awarded in the following manner: The Axis player scores 2 points for each infantry company on Crete, the British player scores 1 point for each infantry company in *Alexandria* (it pays for the British to evacuate his troops if he loses the airfield). If the Axis player does not control an airfield on Crete at the end of the game, then Strategic Points are awarded as follows: the British player scores 500 points plus 1 point for each infantry company on Crete; the Axis player scores 1 point for each infantry company in *Athens*. (It pays for the Axis to evacuate his troops from Crete *if* he will be unable to capture the airfield).

G. During this scenario only, the Axis player may use the AUTO-LOAD TRANSPORTS function. When employed, this function will automatically load *infantry* into all eligible empty transports in Athens. If you wish some of the transports to carry supplies, they should be manually loaded prior to using the AUTO-LOAD TRANSPORTS function.

H. During this scenario only, the Axis player may use the AUTO-FORM TF function. When employed, this function will automatically form *all* eligible ships in Athens into one TF. The mission for an AUTO FORM TF must be "T" or "E".

I. Air Combat over Crete will occur each AM turn in which Axis troops have a foothold on Malta. The Air Combat will follow the sequence listed below:

(1) Molaoi-based long-range CAP will attack Crete-based bombers and fighters available for ground support missions.

(2) Crete-based long-range CAP will attack Molaoi-based bombers and fighters available for ground support missions.

(3) Crete-based long-range CAP will attack Athens-based bombers and fighters available for ground support missions.

J. Only JU52 aircraft may be transferred to a captured German airbase on Crete.

K. German transports do not have to refit after returning to ports.

L. The weather will be CLEAR at the start of the game.

M. Ground support/bombardment provided for forces on Crete will be greatly reduced in effectiveness (and yet still quite powerful).

10.3 Mini-Game Duration:

Mini-games will end after a specified number of turns. Mini-game durations are as follows: Pedestal — 12 turns, Crete — 24 turns.

10.4 Mini-Game Levels of Victory:

The computer will automatically DOUBLE the points scored by each player prior to computing the level of victory. The adjusted point totals may then be applied to the table in 9.5 F.

11.0 SOLITAIRE PLAY

When playing solitaire games, the computer will command the

British Forces.

A. There are 4 levels of solitaire difficulty. The level of difficulty is determined at the start of the game. At level 3, the British will perform according to their historical accuracy. As the level number is *decreased*, the British bomber, torpedo, and gunfire accuracy will *increase*. These levels may be used to handicap a two-player game if desired.

B. It is possible to start a game in solitaire mode, save it, and then restart it as a two-player game. To do this set the main menu to two-player mode before restarting the saved game.

C. It is possible to save a two-player game and restart it as a solitaire game when using the following restriction: All British TFs must end the two-player segment IN-PORT.

12.0 TWO-PLAYER GAMES

When using the two-player format, the following procedure should be observed:

A. While the Axis player is giving commands to his forces, the British player should turn away or leave the room.

B. While the British player is giving commands to his forces, the Axis player should turn away or leave the room.

C. During the combat resolution phase, both players should view the results.

13.0 ORDER OF BATTLE

CRETE SCENARIO

BASE	INFANTRY	SUPPLIES	AIRCRAFT	SHIPS
AXIS				
ATHENS	6800	500	340	
MOLAOI	11000	150	350	
AT SEA	5000	13	0	2DE 63TR 11SS
BRITISH				
ALEXANDRIA	10000	500	8	1CV 4BB 5CL 5CLAA 31DD 2DE 1DML 6TR
CRETE	40000	5	0	
TOBRUK	0	50	8	
AT SEA	0	0	0	5MTB 6SS

PEDESTAL SCENARIO

AXIS				
ITALY	20000	300	24	1BB 3CA 5CL 24DD 4DE 3TK 6TR
SICILY	15000	75	312	
SARDINIA	0	30	132	
CRETE	0	30	48	
TRIPOLI	0	10	24	
BENGHAZI	0	5	24	
AFRIKA KORPS	90000	50	156	
AT SEA	0	0	0	20MTB 19SS
BRITISH				
GIBRALTAR	2000	300	172	4CV 2BB 3CL 4CLAA 23DD 7DE 1DMS 1TK 13TR
ALEXANDRIA	2000	300	18	
MALTA	15000	15	166	
EIGHTH ARMY	90000	100	138	
AT SEA	0	0	0	10SS

CAMPAIGN GAME

AXIS				
ITALY	20000	500	24	2BB 4CA 5CL 25DD 3DE 20MTB 5TK 25TR 36SS
SICILY	20000	75	332	
SARDINIA	0	30	102	
CRETE	0	30	72	
TRIPOLI	0	10	54	
BENGHAZI	0	5	66	
AFRIKA KORPS	90000	50	180	
AT SEA	0	0	0	21SS
BRITISH				
GIBRALTAR	2000	900	78	5CV 3BB 4CL 4CLAA 31DD 10DE 1DML 4DMS 2TK 18TR
ALEXANDRIA	2000	300	12	3CL 5CLAA 17DD 14DE 3DMS 11TR 1BBT 11SS
MALTA	15000	40	153	
TOBRUK	25000	20	66	
EIGHTH ARMY	80000	100	96	
AT SEA	0	0	0	10SS

14.0 SHIP DATA

CAMPAIGN and PEDESTAL SCENARIOS

Axis Ships

	MG	AA	TT	MS	CC	DF	TF	ARV		MG	AA	TT	MS	CC	DF	TF	ARV
ITALY	0	50	0	20	500	0	16	0	MTB-MAS553	0	1	2	40	0	2	16	0
SICILY	0	50	0	20	500	0	17	0	MTB-MAS554	0	1	2	40	0	2	16	0
SARDINIA	0	25	0	20	500	0	18	0	MTB-MAS556	0	1	2	40	0	2	16	0
CRETE	0	25	0	20	500	0	19	0	MTB-MAS557	0	1	2	40	0	2	16	0
TRIPOLI	0	20	0	20	500	0	20	0	MTB-MAS564	0	1	2	40	0	2	16	0
BENGHAZI	0	10	0	20	100	0	21	0	SS-U81	0	0	16	10	0	7	22	0
BB-LITTORIO	9	16	0	25	0	80	16	0	SS-U205	0	0	16	10	0	7	23	0
BB-VITTORIO VENETO	9	16	0	25	0	80	16	0	SS-U431	0	0	22	10	0	7	23	0
CL-EUGENIO DI SAVOIA	8	6	6	30	0	22	16	0	SS-U565	0	0	22	10	0	7	23	0
CL-MONTECUCCOLI	8	6	4	30	0	20	16	0	SS-U331	0	0	22	10	0	7	16	11
CA-GORIZIA	8	12	0	30	0	26	16	0	SS-U453	0	0	22	10	0	7	23	0
CA-TRIESTE	8	12	8	30	0	24	16	0	SS-U559	0	0	22	10	0	7	22	0
CA-BOLZANO	8	12	8	30	0	25	16	0	SS-U77	0	0	16	10	0	7	23	0
CL-ATTENDOLO	8	6	4	30	0	20	16	0	SS-U83	0	0	16	10	0	7	22	0
CA-TRENTO	8	12	8	30	0	24	16	0	SS-U97	0	0	16	10	0	7	22	0
CL-GARIBALDI	10	8	6	30	0	23	16	0	SS-U561	0	0	22	10	0	7	22	0
CL-DUCA D'AOSTA	8	6	6	30	0	22	16	0	SS-U372	0	0	22	10	0	7	22	0
DD-ORIANI	0	4	6	35	0	7	16	0	SS-U375	0	0	22	10	0	7	23	0
DD-ASCARI	0	4	6	35	0	7	16	0	SS-U562	0	0	22	10	0	7	23	0
DD-GIOBERTI	0	4	6	35	0	7	16	0	SS-U73	0	0	16	10	0	7	16	11
DD-VIVALDI	0	6	6	35	0	8	16	0	SS-GALATEA	0	0	12	10	0	6	23	0
DD-MALOCELL'O	0	6	6	35	0	8	16	0	SS-NEREIDE	0	0	12	10	0	6	16	0
DD-PREMUDA	0	4	6	35	0	7	16	0	SS-ASTERIA	0	0	10	10	0	7	16	10
DD-ZENO	0	6	6	35	0	8	16	0	SS-PLATINO	0	0	10	10	0	7	24	0
DD-LEGIONARIO	0	5	6	35	0	8	16	0	SS-BEILUL	0	0	12	10	0	6	16	0
DD-FOLGORE	0	4	6	35	0	7	16	0	SS-MOCENIGO	0	0	16	10	0	7	16	0
DD-FRECCIA	0	4	6	35	0	7	16	0	SS-OTARIA	0	0	14	10	0	7	16	10.5
DD-SAETTA	0	4	6	35	0	7	16	0	SS-DESSIE	0	0	12	10	0	6	16	10.5
DD-ALPINO	0	4	6	35	0	7	16	0	SS-BRIN	0	0	14	10	0	7	16	11
DD-BERSAGLIERE	0	4	6	35	0	7	16	0	SS-MALACHITE	0	0	12	10	0	6	24	0
DD-PIGAFETTA	0	6	6	35	0	8	16	0	SS-CORALLO	0	0	12	10	0	6	16	0
DD-MITRAGLIERE	0	5	6	35	0	8	16	0	SS-ONDINA	0	0	12	10	0	6	16	0
DD-AVIERE	0	4	6	35	0	7	16	0	SS-SIRENA	0	0	12	10	0	6	22	0
DD-GENIERE	0	4	6	35	0	7	16	0	SS-ZAFFIRO	0	0	12	10	0	6	24	0
DD-CAMICIA NERA	0	4	6	35	0	7	16	0	SS-VELELLA	0	0	10	10	0	7	24	0
DD-CORAZZIERE	0	4	6	35	0	7	16	0	SS-BRONZO	0	0	10	10	0	7	16	10.5
DD-CORSARO	0	5	6	35	0	8	16	0	SS-EMO	0	0	16	10	0	7	16	10.5
DD-MAESTRALE	0	4	6	35	0	7	16	0	SS-UARSCIEK	0	0	12	10	0	6	16	11
DD-TURBINE	0	4	6	35	0	7	16	0	SS-GIADA	0	0	10	10	0	7	16	11
DD-GRECALE	0	4	6	35	0	7	16	0	SS-ACCIAIO	0	0	10	10	0	7	24	0
DD-FUCILIERE	0	4	6	35	0	7	16	0	SS-ALAGI	0	0	12	10	0	6	16	10.5
DD-STRALE	0	4	6	35	0	7	16	0	SS-ONICE	0	0	12	10	0	6	16	0
DE-CALLIOPE	0	3	4	25	0	6	16	0	SS-ASCIANGHI	0	0	12	10	0	6	16	10.5
DE-ORSA	0	2	0	25	0	7	16	0	SS-ARADAM	0	0	12	10	0	6	16	0
DE-PEGASO	0	2	0	25	0	7	16	0	SS-AXUM	0	0	12	10	0	6	16	10.5
MTB-S36	0	1	2	40	0	2	16	0	SS-MICCA	0	0	10	10	0	7	24	0
MTB-S54	0	1	2	40	0	2	16	0	SS-ZOEA	0	0	8	10	0	7	16	0
MTB-S55	0	1	2	40	0	2	16	0	SS-ATROPO	0	0	8	10	0	7	16	0
MTB-S56	0	1	2	40	0	2	16	0	SS-PERLA	0	0	12	10	0	6	16	0
MTB-S58	0	1	2	40	0	2	16	0	SS-DAGABUR	0	0	12	10	0	6	16	11
MTB-S59	0	1	2	40	0	2	16	0	SS-BRAGADIN	0	0	6	10	0	6	16	0
MTB-S60	0	1	2	40	0	2	16	0	SS-SCIESA	0	0	16	10	0	7	16	0
MTB-S30	0	1	2	40	0	2	16	0	SS-TOTI	0	0	16	10	0	7	16	0
MTB-MS16	0	1	2	35	0	2	16	0	SS-SANTAROSA	0	0	12	10	0	6	16	0
MTB-MS22	0	1	2	35	0	2	16	0	SS-NARVALO	0	0	12	10	0	6	16	0
MTB-MS31	0	1	2	35	0	2	16	0	SS-CORRIDONI	0	0	6	10	0	6	16	0
MTB-MS23	0	1	2	35	0	2	16	0	SS-DANDOLO	0	0	16	10	0	7	16	10.5
MTB-MS25	0	1	2	35	0	2	16	0	SS-SCIRE	0	0	12	10	0	6	16	0
MTB-MS26	0	1	2	35	0	2	16	0	SS-VOLFRAMIO	0	0	10	10	0	7	16	11
MTB-MAS552	0	1	2	40	0	2	16	0	SS-GRANITO	0	0	10	10	0	7	16	10.5

	MG	AA	TT	MS	CC	DF	TF	ARV
SS-AVORIO	0	0	8	10	0	7	16	10.5
SS-COBALTO	0	0	10	10	0	7	16	10.5
TK-GIULIANO	0	2	0	15	18	20	16	0
TK-MANTOVANI	0	2	0	15	18	20	16	0
TK-CORRADO	0	2	0	15	18	20	16	5
TK-SAGONA	0	2	0	15	18	20	16	10
TK-SAN ANDREA	0	2	0	15	18	20	16	15
TR-CONTE ROSSO	0	1	0	30	8	20	16	0
TR-MARCO POLO	0	1	0	30	8	20	16	0
TR-NEPTUNIA	0	1	0	30	8	20	16	0
TR-VULCANIA	0	1	0	30	8	20	16	10
TR-OCEANIA	0	1	0	30	8	20	16	25
TR-ANKARA	0	2	0	15	8	16	16	0
TR-ANDREA GRILLI	0	2	0	15	8	16	16	0
TR-BARBARO	0	2	0	15	8	16	16	0
TR-CAPO FARO	0	2	0	15	8	16	16	25
TR-CAPO VITA	0	2	0	15	8	16	16	25
TR-VERDE	0	1	0	15	6	14	16	0
TR-DUISBURG	0	1	0	15	6	14	16	0
TR-MANARA	0	1	0	15	6	14	16	0
TR-MONTELLIO	0	1	0	15	6	14	16	10
TR-NAPOLI	0	1	0	15	6	14	16	25
TR-OGADEN	0	1	0	15	4	10	16	0
TR-PADENNA	0	1	0	15	4	10	16	0
TR-PERSIANO	0	1	0	15	4	10	16	0
TR-PREUSSEN	0	1	0	15	4	10	16	0
TR-RUHR	0	1	0	15	4	10	16	0
TR-TEMBIEN	0	1	0	15	4	10	16	10
TR-WACHTFELS	0	1	0	15	4	10	16	10
TR-ROSOLINO PILO	0	1	0	15	4	10	16	10
TR-MARITZA	0	1	0	15	4	10	16	25
TR-BIANCHI	0	1	0	15	4	10	16	25
DE-ANTARES	0	3	4	25	0	6	16	Pedestal Scenario Only

British Ships

	MG	AA	TT	MS	CC	DF	TF	ARV
GIBRALTAR	0	50	0	0	500	0	1	0
ALEXANDRIA	0	50	0	0	500	0	2	0
MALTA	0	25	0	0	300	0	3	0
TOBRUK	0	20	0	0	200	0	4	0
CV-EAGLE	0	4	0	25	33	32	1	0.5
CV-ARGUS	0	6	0	20	20	20	1	0.5
CV-VICTORIOUS	0	12	0	30	36	60	1	60
CV-FURIOUS	0	12	0	30	36	45	1	60
CV-INDOMITABLE	0	16	0	30	56	60	1	60
BB-MALAYA	8	16	0	25	0	66	1	0.5
BB-NELSON	9	18	0	25	0	72	1	60
BB-RODNEY	9	18	0	25	0	72	1	60
CLAA-CHARYBDIS	0	10	6	30	0	15	1	0.5
CLAA-CAIRO	0	8	0	30	0	13	1	0.5
CL-KENYA	12	8	6	30	0	20	1	0.5
CL-LIVERPOOL	12	8	6	30	0	22	1	0
CLAA-CLEOPATRA	0	10	6	30	0	15	2	0
CLAA-DIDO	0	10	6	30	0	15	2	0
CLAA-HERMOINE	0	10	6	30	0	15	2	0
CLAA-EURYALUS								
CL-ARETHUSA	6	8	6	30	0	15	2	0
CL-BIRMINGHAM	12	8	6	30	0	22	2	0
CLAA-COVENTRY	0	10	0	30	0	13	2	0
CL-NEWCASTLE	12	8	6	30	0	22	2	0
CL-NIGERIA	12	8	6	30	0	20	1	60
CL-MANCHESTER	12	8	6	30	0	22	1	60
CLAA-PHOEBE	0	10	6	30	0	15	1	60
CLAA-SIRIUS	0	10	6	30	0	15	1	60
DD-HERO	0	4	8	35	0	7	2	0
DE-HURWORTH	0	6	0	25	0	6	2	0
DE-ERIDGE	0	6	0	25	0	6	2	0
DD-PARTRIDGE	0	4	8	35	0	7	1	0
DD-ITHURIEL	0	4	8	35	0	7	1	0.5

	MG	AA	TT	MS	CC	DF	TF	ARV
DD-ANTELOPE	0	4	8	35	0	7	1	0.5
DD-WISHART	0	3	3	35	0	6	1	0.5
DD-WESTCOTT	0	3	3	35	0	6	1	0.5
DD-WRESTLER	0	3	3	35	0	6	1	0.5
DD-VIDETTE	0	3	3	35	0	6	1	0
DE-GROVE	0	6	0	25	0	6	2	4.5
DE-BEDOUIIN	0	8	4	35	0	8	1	0
DD-MARNE	0	6	8	35	0	8	1	0
DD-MATCHLESS	0	6	8	35	0	8	1	0
DE-BLANKNEY	0	6	0	25	0	6	1	0
DE-MIDDLETON	0	6	0	25	0	6	1	0
DE-BADSWORTH	0	4	0	25	0	6	1	0
DD-KUJAWIAK	0	3	3	35	0	6	1	0
DD-ONSLOW	0	4	8	35	0	7	1	0
DD-ICARUS	0	4	10	35	0	7	1	0.5
DD-ESCAPADE	0	4	8	35	0	7	1	0
DD-FORTUNE	0	4	8	35	0	7	2	0
DD-GRIFFIN	0	4	8	35	0	7	2	0
DD-HOTSPUR	0	4	8	35	0	7	2	0
DE-DULVERTON	0	6	0	25	0	6	2	0
DE-EXMOOR	0	4	0	25	0	6	2	0
DE-CROOME	0	6	0	25	0	6	2	0
DE-AIREDALE	0	4	0	25	0	6	2	0
DE-BEAUFORT	0	6	0	25	0	6	2	0
DE-TETCOTT	0	6	0	25	0	6	2	0
DE-ALDENHAM	0	4	0	25	0	6	2	0
DD-NAPIER	0	6	10	35	0	7	2	0
DD-NESTOR	0	6	10	35	0	7	2	0
DD-NIZAM	0	6	10	35	0	7	2	0
DD-NORMAN	0	6	10	35	0	7	2	0
DD-JERVIS	0	6	10	35	0	7	2	0
DD-KELVIN	0	6	10	35	0	7	2	0
DD-JAVELIN	0	6	10	35	0	7	2	0
DD-PAKENHAM	0	4	8	35	0	7	2	0
DD-PALADIN	0	4	8	35	0	7	2	0
DD-INCONSTANT	0	4	8	35	0	7	2	0
DD-SIKH	0	8	4	35	0	8	2	0
DD-ZULU	0	8	4	35	0	8	2	0
DD-HASTY	0	4	8	35	0	7	2	0
DD-ASHANTI	0	8	4	35	0	8	1	60
DD-INTREPID	0	4	10	35	0	7	1	60
DD-FORESIGHT	0	4	8	35	0	7	1	60
DD-FURY	0	4	8	35	0	7	1	60
DD-PATHFINDER	0	4	8	35	0	7	1	60
DD-PENN	0	4	8	35	0	7	1	60
DE-DERWENT	0	4	0	25	0	6	1	60
DE-BRAMHAM	0	6	0	25	0	6	1	60
DE-BICESTER	0	6	0	25	0	6	1	60
DE-LEDBURY	0	6	0	25	0	6	1	60
DD-LAFOREY	0	6	8	35	0	8	1	60
DD-LIGHTNING	0	6	8	35	0	8	1	60
DD-LOOKOUT	0	6	8	35	0	8	1	60
DD-QUENTIN	0	4	8	35	0	7	1	60
DD-ESKIMO	0	8	4	35	0	8	1	60
DD-TARTAR	0	8	4	35	0	8	1	60
DD-VANSITTART	0	3	3	35	0	6	1	60
DD-ZETLAND	0	6	0	25	0	6	1	60
DE-WILTON	0	6	0	25	0	6	1	60
DD-KEPPEL	0	2	6	35	0	7	1	60
DD-MALCOLM	0	2	3	35	0	7	1	60
DD-WOLVERINE	0	3	3	35	0	6	1	60
DD-VENOMOUS	0	3	3	35	0	6	1	60
DMS-HEBE	0	2	0	15	1	6	1	0
DMS-SPEEDY	0	2	0	15	1	6	1	0
DMS-RYE	0	1	0	15	1	6	1	0
DMS-HYTHE	0	1	0	15	1	6	1	0
DMS-BOSTON	0	1	0	15	0	6	2	0

	MG	AA	TT	MS	CC	DF	TF	ARV
DMS-SEAHAM	0	1	0	15	0	6	2	0
DMS-PARKTOWN	0	1	0	15	0	6	2	4.5
DML-WELSHMAN	0	6	0	40	2	9	1	2.5
DE-COLTSFOOT	0	1	0	15	0	6	1	0
DE-DELPHINIUM	0	1	0	15	0	6	2	0
DE-PRIMULA	0	1	0	15	0	6	2	0
DE-ERICA	0	1	0	15	0	6	2	0
DE-SNAPDRAGON	0	1	0	15	0	6	2	0
SS-TURBULENT	0	0	22	10	0	6	2	60
SS-THRASHER	0	0	22	10	0	6	5	0
SS-PROTEUS	0	0	16	15	0	6	5	0
SS-THORN	0	0	22	10	0	6	5	0
SS-TAKU	0	0	20	10	0	6	5	0
SS-PORPOISE	0	0	12	10	0	6	5	0
SS-UNA	0	0	8	10	0	6	2	0
SS-UPRIGHT	0	0	8	10	0	6	2	4.5
SS-PARTHIAN	0	0	16	15	0	6	2	4.5
SS-REGENT	0	0	16	15	0	6	2	4.5
SS-RORQUAL	0	0	12	10	0	6	2	4.5
SS-CACHALOT	0	0	12	10	0	6	2	4.5
SS-UNBEATEN	0	0	8	10	0	6	2	60
SS-UNBROKEN	0	0	8	10	0	6	6	0
SS-SAFARI	0	0	12	10	0	6	6	0
SS-UPROAR	0	0	8	10	0	6	2	4.5
SS-ULTIMATUM	0	0	8	10	0	6	2	4.5
SS-UNISON	0	0	8	10	0	6	6	0
SS-UNRUFFLED	0	0	8	10	0	6	6	0
SS-UMBRA	0	0	8	10	0	6	6	0
SS-UNITED	0	0	8	10	0	6	2	60
TK-KENTUCKY	0	2	0	15	18	20	1	0
TK-OHIO	0	2	0	15	18	20	1	60

	MG	AA	TT	MS	CC	DF	TF	ARV
TR-TROILUS	0	1	0	15	6	14	1	0
TR-BURDWAN	0	1	0	15	4	10	1	0
TR-CHANT	0	1	0	15	4	10	1	0
TR-TANIMBAR	0	1	0	15	6	14	1	0
TR-ORARI	0	2	0	15	8	16	1	0
TR-C.O. PRETORIA	0	1	0	15	6	14	2	0
TR-BHUTAN	0	1	0	15	4	10	2	0
TR-POTARO	0	1	0	15	4	10	2	0
TR-C.O. CALCUTTA	0	1	0	15	6	14	2	0
TR-BULKOIL	0	1	0	15	6	14	2	0
TR-REMBRANDT	0	1	0	15	6	14	2	0
TR-AAGTEKERK	0	1	0	15	4	10	2	0
TR-C.O. EDINBURGH	0	1	0	15	6	14	2	0
TR-C.O. LINCOLN	0	1	0	15	6	14	2	0
TR-ELIZABETH BAKKE	0	1	0	15	6	14	2	0
TR-AJAX	0	1	0	15	6	14	2	0
TR-DEUCALION	0	1	0	15	6	14	1	60
TR-EMPIRE HOPE	0	2	0	15	8	16	1	60
TR-GLENORCHY	0	1	0	15	6	14	1	60
TR-BRISBANE STAR	0	2	0	15	8	16	1	60
TR-CLAN FERGUSON	0	1	0	15	6	14	1	60
TR-ROCHESTER CASTLE	0	1	0	15	6	14	1	60
TR-SANTA ELISA	0	1	0	15	6	14	1	60
TR-ALMERIA LYKES	0	1	0	15	6	14	1	60
TR-WAIRANGI	0	2	0	15	8	16	1	60
TR-DORSET	0	2	0	15	8	16	1	60
TR-PORT CHALMERS	0	1	0	15	6	14	1	60
TR-MELBOURNE STAR	0	1	0	15	6	14	1	60
TR-WAIMARAMA	0	2	0	15	8	16	1	60
BBT-CENTURION	0	2	0	20	4	50	2	0

CRETE SCENARIO

Axis Ships

	MG	AA	TT	MS	CC	DF	TF	ARV
ATHENS	0	80	0	0	500	0	16	0
MOLAOI	0	40	0	0	500	0	17	0
CRETE	0	40	0	0	500	0	19	?
DE-LUPO	0	3	4	25	0	6	23	0
DE-SAGITTARIO	0	3	4	25	0	6	24	0
SS-TRICHECO	0	0	16	10	0	7	22	0
SS-UARSCIEK	0	0	12	10	0	6	22	0
SS-FISALIA	0	0	12	10	0	6	22	0
SS-TOPAZIO	0	0	12	10	0	6	22	0
SS-ADUA	0	0	12	10	0	6	22	0
SS-DESSIE	0	0	12	10	0	6	22	0
SS-MALACHITE	0	0	12	10	0	6	22	0
SS-SQUALO	0	0	16	10	0	7	22	0
SS-SMERALDO	0	0	12	10	0	6	22	0
SS-NEREIDE	0	0	12	10	0	6	22	0
SS-SIRENA	0	0	12	10	0	6	22	0
TR K241	0	1	0	5	1	2	23	0
TR-K242	0	1	0	5	1	2	23	0
TR-K243	0	1	0	5	1	2	23	0
TR-K244	0	1	0	5	1	2	23	0
TR-K245	0	1	0	5	1	2	23	0
TR-K246	0	1	0	5	1	2	23	0
TR-K247	0	1	0	5	1	2	23	0
TR-K248	0	1	0	5	1	2	23	0
TR-K249	0	1	0	5	1	2	23	0
TR-K250	0	1	0	5	1	2	23	0
TR-K251	0	1	0	5	1	2	23	0
TR-K252	0	1	0	5	1	2	23	0
TR-K253	0	1	0	5	1	2	23	0
TR-K254	0	1	0	5	1	2	23	0
TR-K255	0	1	0	5	1	2	23	0
TR-K256	0	1	0	5	1	2	23	0

	MG	AA	TT	MS	CC	DF	TF	ARV
TR-K257	0	1	0	5	1	2	23	0
TR-K258	0	1	0	5	1	2	23	0
TR-K259	0	1	0	5	1	2	23	0
TR-K260	0	1	0	5	1	2	23	0
TR-K261	0	1	0	5	1	2	23	0
TR-K262	0	1	0	5	1	2	23	0
TR-K263	0	1	0	5	1	2	23	0
TR-K264	0	1	0	5	1	2	23	0
TR-K265	0	1	0	5	1	2	23	0
TR-K266	0	1	0	5	1	2	24	0
TR-K267	0	1	0	5	1	2	24	0
TR-K268	0	1	0	5	1	2	24	0
TR-K269	0	1	0	5	1	2	24	0
TR-K270	0	1	0	5	1	2	24	0
TR-K271	0	1	0	5	1	2	24	0
TR-K272	0	1	0	5	1	2	24	0
TR-K273	0	1	0	5	1	2	24	0
TR-K274	0	1	0	5	1	2	24	0
TR-K275	0	1	0	5	1	2	24	0
TR-K276	0	1	0	5	1	2	24	0
TR-K277	0	1	0	5	1	2	24	0
TR-K278	0	1	0	5	1	2	24	0
TR-K279	0	1	0	5	1	2	24	0
TR-K280	0	1	0	5	1	2	24	0
TR-K281	0	1	0	5	1	2	24	0
TR-K282	0	1	0	5	1	2	24	0
TR-K283	0	1	0	5	1	2	24	0
TR-K284	0	1	0	5	1	2	24	0
TR-K285	0	1	0	5	1	2	24	0
TR-K286	0	1	0	5	1	2	24	0
TR-K287	0	1	0	5	1	2	24	0

	MG	AA	TT	MS	CC	DF	TF	ARV
TR-K288	0	1	0	5	1	2	24	0
TR-K289	0	1	0	5	1	2	24	0
TR-K290	0	1	0	5	1	2	24	0
TR-K291	0	1	0	5	1	2	24	0
TR-K292	0	1	0	5	1	2	24	0
TR-K293	0	1	0	5	1	2	24	0
TR-K294	0	1	0	5	1	2	24	0
TR-K295	0	1	0	5	1	2	24	0
TR-K296	0	1	0	5	1	2	24	0
TR-K297	0	1	0	5	1	2	24	0
TR-K298	0	1	0	5	1	2	24	0
TR-K299	0	1	0	5	1	2	24	0
TR-K300	0	1	0	5	1	2	24	0
TR-K301	0	1	0	5	1	2	24	0
TR-K302	0	1	0	5	1	2	24	0
TR-K303	0	1	0	5	1	2	24	0

British Ships

	MG	AA	TT	MS	CC	DF	TF	ARV
MALTA	0	40	0	0	500	99	1	0
ALEXANDRIA	0	80	0	0	500	99	2	0
CRETE	0	10	0	0	500	99	3	0
TOBRUK	0	40	0	0	500	99	4	0
CV-FORMIDABLE	0	12	0	30	36	45	2	2
BB-BARHAM	8	16	0	25	0	66	2	0
BB-WARSPITE	8	16	0	25	0	66	2	0
BB-VALIANT	8	16	0	25	0	66	2	0
BB-QUEEN ELIZABETH	8	16	0	25	0	66	2	0
CL-GLOUCESTER	12	8	6	30	0	22	2	0
CL-FIJI	12	8	6	30	0	20	2	0
CL-AJAX	8	4	8	30	0	16	2	0
CLAA-DIDO	0	10	6	30	0	15	2	0
CL-ORION	8	4	8	30	0	16	2	0
CL-PERTH	8	4	8	30	0	16	2	0
CLAA-NAIAD	0	10	6	30	0	15	2	0
CLAA-PHOEBE	0	10	6	30	0	15	2	0
CLAA-CALCUTTA	0	8	0	30	0	13	2	0
CLAA-CARLISLE	0	8	0	30	0	13	2	0
DD-NAPIER	0	6	10	35	0	7	2	0
DD-NIZAM	0	6	10	35	0	7	2	0
DD-KANDAHAR	0	6	10	35	0	7	2	0
DD-KELVIN	0	6	10	35	0	7	2	0
DD-KIPLING	0	6	10	35	0	7	2	0
DD-KINGSTON	0	6	10	35	0	7	2	0

	MG	AA	TT	MS	CC	DF	TF	ARV
DD-KIMBERLEY	0	6	10	35	0	7	2	0
DD-KELLY	0	6	10	35	0	7	2	0
DD-NUBIAN	0	8	4	35	0	8	2	0
DD-JUNO	0	6	10	35	0	7	2	0
DD-JANUS	0	6	10	35	0	7	2	0
DD-JERVIS	0	6	10	35	0	7	2	0
DD-JACKAL	0	6	10	35	0	7	2	0
DD-ISIS	0	4	8	35	0	7	2	0
DD-IMPERIAL	0	4	8	35	0	7	2	0
DD-ILEX	0	4	8	35	0	7	2	0
DD-HERO	0	4	8	35	0	7	2	0
DD-HOTSPUR	0	4	8	35	0	7	2	0
DD-HEREWARD	0	4	8	35	0	7	2	0
DD-HASTY	0	4	8	35	0	7	2	0
DD-HAVOCK	0	4	8	35	0	7	2	0
DD-GRIFFIN	0	4	8	35	0	7	2	0
DD-GREYHOUND	0	4	8	35	0	7	2	0
DD-DECOY	0	4	8	35	0	7	2	0
DD-DEFENDER	0	4	8	35	0	7	2	0
DD-STUART	0	2	6	35	0	7	2	0
DD-VOYAGER	0	2	6	35	0	7	2	0
DD-VENETTA	0	2	6	35	0	7	2	0
DD-WATERHEN	0	2	6	35	0	7	2	0
DE-AUCKLAND	0	8	0	20	0	6	2	0
DE-FLAMINGO	0	6	0	20	0	6	2	0
DD-KASHMIR	0	6	10	35	0	7	2	0
DD-JAGUAR	0	6	10	35	0	7	2	0
MTB-67	0	1	2	35	0	2	5	0
MTB-213	0	1	2	35	0	2	5	0
MTB-214	0	1	2	35	0	2	5	0
MTB-216	0	1	2	35	0	2	5	0
MTB-217	0	1	2	35	0	2	5	0
DML-ABDIEL	0	6	0	40	2	9	2	0
SS-URGE	0	0	8	10	0	6	6	0
SS-UPHOLDER	0	0	8	10	0	6	6	0
SS-TETRARCH	0	0	20	10	0	6	6	0
SS-RORQUAL	0	0	12	10	0	6	6	0
SS-REGENT	0	0	16	15	0	6	6	0
SS-TRUANT	0	0	20	10	0	6	6	0
TR-CLAN CAMPBELL	0	1	0	15	6	14	2	0
TR-CLAN CHATTAN	0	1	0	15	6	14	2	0
TR-CLAN LAMONT	0	1	0	15	6	14	2	0
TR-GLENEARN	0	2	0	15	8	16	2	0
TR-GLENGYLE	0	2	0	15	8	16	2	0
TR-GLENROY	0	2	0	15	8	16	2	0

15.0 STRATEGY NOTES

AXIS STRATEGY

Axis strategy should aim for the eventual collapse of Alexandria as this is the only likely means of achieving a decisive victory. There are three basic approaches to the Alexandria strategy: (1) Ignore Malta and commit all Axis resources towards an immediate North African blitzkrieg; (2) Suppress Malta (destroy all supplies and aircraft) through continuous air attack prior to launching the North African offensive; (3) Capture Malta through airborne and amphibious assault prior to launching the North African offensive.

SUPPRESSING MALTA

Suppressing Malta is a two-phase operation that requires (1) the reduction of Malta's fighter strength and (2) the destruction of Malta's supplies. Phase 1 can be accomplished by launching Sicily- and Tripoli-based fighter sweeps to attrition the Spitfires down to a manageable level. The sweeps should include enough ME109s to equal or outnumber Malta's Spitfires and no more than a handful of bombers.

In Phase 2 of the suppression the Axis player can launch formations of 100 or more bombers to attack Malta's supply

dumps. These attacks should include a substantial fighter escort as long as Malta can put Spitfires in the air. When supplies have been reduced below 3, Malta's aircraft will be unable to fly and may be destroyed on the ground. Suppression of Malta will usually require 2 to 3 weeks and a loss to the Axis of approximately 100 fighters and 40 bombers. Malta will recover quickly from the suppression unless the Axis is successful in its blockade.

THE BLOCKADE

The Axis player has a powerful mix of air, submarine, MTB and heavy surface units available to blockade Malta. With proper coordination and a little luck the Axis forces can devastate even the best protected of British convoys.

Axis air and submarine forces must be divided to guard both the eastern and western approaches to Malta. Bombers based in Sardinia and Crete are positioned to take early shots at the British convoys. British ships slowed by damage near the start of their journey have almost no chance of reaching Malta. Bombers based in Sicily or Tripoli can guard *both* the eastern and western

approaches to Malta but they often take frightful losses from Malta-based CAP. Sicily- and Tripoli-based bombers usually inflict their greatest damage *after* the British transports have unloaded their cargo.

Axis submarines should be positioned in the areas south of Crete and south of Sardinia. These submarines will be well-positioned to pounce on ships crippled by air attacks. The submarine TFs should contain 6–10 subs with at least 2 U-boats included. Although their numbers are impressive, the Italian submarines will usually perform poorly.

The Axis forces are guaranteed one shot at the British convoys before they enter Malta's harbor. The Axis player should form two surface TFs: one containing all available BB, CA, CL, and DD units and one containing all available MTB units. The heavy surface TF should seek combat only during daylight turns. The MTB force should only seek combat during night turns. The point of interception is the Malta square as all British TFs must stop there before entering the harbor.

SUPPLYING THE AFRIKA KORPS

Supplying the Afrika Korps will require weekly convoys from Italy to Africa. The Afrika Korps consumes about 40 supply dumps a week when doing nothing and 75 supply dumps a week during an all-out offensive. The Axis may air-transport 21 supply dumps per week into Africa.

The Axis player can usually achieve victory in the first month if the flow of supplies into Africa is unrestricted. To achieve the unrestricted flow of supplies the Axis player must suppress Malta. The suppression of Malta requires the transfer of vital air strength out of the Afrika Korps, which makes it costly to suppress Malta and attack in North Africa at the same time.

The Axis player is confronted with the same strategic decisions that confronted Hitler, Mussolini and Rommel in the summer of 1942: Immediately pursue the weakened Eighth Army and possibly break through to Alexandria? Suppress Malta first to take the pressure off the supply convoys? Attempt to capture Malta and secure the supply line once and for all?

AXIS SUPPLY CONVOYS

Axis supply convoys should contain approximately 2 CLs, 10 DDs, 2 DEs and all available TRs and TKs. Transport space should not be wasted with infantry since infantry can be flown into Africa in sufficient quantities.

Tripoli is usually the safest destination harbor for the supply convoys; the route is shorter and almost entirely within range of Sicily or Tripoli CAP. Benghazi is closer to the front line so fewer supplies will be consumed in transit. Also, due to its greater distance from Malta, Benghazi harbor may be a safer place to *unload* the cargo.

ASSAULT ON MALTA

The assault on Malta should be a combined airborne and amphibious operation. The amphibious TF should plot a "T" mission and contain all available transports loaded with 50% troops and 50% supplies. The screen for the amphibious force should be the same as for an Axis supply convoy. The Axis should also include for this operation a bombardment TF consisting of all remaining BB, CA, CL and DD units.

The Axis paratroops should be dropped on the same turn that the amphibious TF unloads on Malta. As long as opposition remains on Malta the Sicily-based bombers should restrict their anti-ship and anti-base missions to ensure adequate ground support for the assault. The bombardment force should loiter in the Malta square until its endurance falls below 9. The assault will be successful if the following conditions are met: (1) the Malta garrison remains unsupplied; (2) the assault force is kept in supply; (3) Axis bombardment and ground support are continuous and heavy.

BRITISH STRATEGY

The British must hold Alexandria at all costs; failure to do this will probably result in an Axis decisive victory. The best way to stop the Axis in Africa is to maintain a potent air force on Malta. To remain effective as a base, Malta must receive periodic air

reinforcements and supplies. After the Axis captures Tobruk the British may no longer fly reinforcements directly from a base into Malta. Spitfires may be flown from aircraft carriers into Malta if the carriers are within 15 spaces of Malta.

BRITISH SUPPLY CONVOYS

British supply convoys to Malta will lose 60–100% of their participating transports. Convoy operations are so costly that the British can only afford 2 or 3 of them per campaign game. Convoy operations should employ all available transports and escorts. Carrier TFs may be used to escort the convoys and provide fighter cover. The carriers should only be used for cover when 3 or more of them are available.

EMERGENCY SUPPLY MISSIONS

When supplies run low on Malta and there are not enough transports to send a normal supply convoy, the British must use cruisers and destroyers on an emergency supply mission. An "ES" TF should contain about 4 cruisers and 8 destroyers. The British have enough ships to send 3 or 4 emergency supply TFs at once.

ASSAULT ON MALTA — BRITISH REACTION

When the Axis paratroopers land on Malta the British may perform the following actions to thwart the invasion: (1) resupply Malta with "ES" missions; (2) send Combat TFs to intercept the Axis bombardment TFs; (3) send British bombardment TFs to support the Malta garrison.

A successful "ES" mission is the surest way to defeat the invasion; a supplied British garrison will inflict heavy casualties on the attackers. The bombardment effect of the two Axis TF battleships is equal to 90 ground support bombers; therefore it may be desirable to use a Combat Patrol TF to engage Axis bombardment forces and send them home. The British should only send a bombardment TF if one or more battleships are available. The British player should not hesitate to commit the bulk of his fleet in reaction to the Axis invasion. Although the loss in ships will be high, the Axis cannot effectively attack all of them at once. The flak density of the pure combat TFs (as opposed to transport TFs) will inflict heavy casualties on the attacking bombers and distract them from their ground support role.

ATTACKING AXIS SUPPLY CONVOYS

The Swordfish and Beauforts based on Malta are the hub of the British anti-shipping force. These valuable aircraft are best employed against Axis supply convoys. They should be used sparingly against high CAP or flak density targets. The British should maintain 2 or 3 submarine TFs in the central Mediterranean at all times. A good place to pounce on an Axis convoy is near the entrance to a North African harbor. Ships torpedoed off the African coast will seldom make it back to Italy.

At least once during the game the British player should attempt to intercept an Axis convoy with a surface combat TF. It is possible for the British to form a cruiser-destroyer force in Alexandria or Gibraltar and send it to the central Mediterranean. Such a force could remain in Malta harbor during the day (under a powerful CAP umbrella) and prowl the Axis shipping lanes at night.

16.0 CREDITS

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17.0 HISTORICAL COMMENTARY

MALTA: ROCK IN A HARD PLACE

By Robert S. Billings

On the 21st of June, 1942, General Erwin Rommel had achieved the victory for which his Afrika Korps had been fighting in the desert for many long months. Tobruk had at last fallen to his lightning assault. And with Tobruk captured, the dream of an advance to the British naval base at Alexandria, and even to Cairo and the Suez Canal beyond, had suddenly ceased to be a desert mirage and had become a reality awaiting merely a leader bold enough to bring it to fruition.

The desert war, with its armored joustings, its hundreds of tanks and vehicles racing across the blazing sands up and down the North African coast in attacks and retreats lasting for hundreds of miles, had always been a war of supply. For those hundreds of tanks and vehicles seemed always mad with thirst — for petrol and ammunition, for replacement tanks and vehicles, for provisions for the men for whom these “brazen chariots” had become master, slave, and, often enough, blazing coffin as well. With all the glamor of racing maneuver and tactical skill, victory most often came down to a simple matter of supply — the winner was whoever could replace destroyed tanks first and keep them fueled for maneuver. Now, with the sudden capture of Tobruk, a veritable cornucopia of supply had been opened to the Desert Fox.

The capture came so unexpectedly that there had been no time for the British to destroy the vast storehouse of supplies they had accumulated there. Now it was all Rommel's: the glory, the 30,000 prisoners, the 1400 tons of petrol, the replacement vehicles (2,000 of them), the ammunition (German as well as British).

It was these supplies, in addition to the state of his troops (flushed with a clear-cut victory that has sent the British Eighth Army scampering back into Egypt) which could make the General's dream possible — a final victory in the desert to crown the glorious victories that had just won him promotion to Field Marshal. It was all waiting — but it would require, he felt, a leader of boldness and vision who would take the gambit, who would not shrink from another spin of battle's wheel of fortune.

Mussolini, of course, could stop him. The Italian dictator, in nominal command of the war in North Africa, could insist Rommel stick to the original plan: first the brilliant desert victory, driving the British back to Egypt; then a shift of emphasis, direction, and air support to the little clean-up job that had been waiting now for years. Malta! A small piece of real estate in the middle of the Mediterranean. A chunk of rock overlaid with soil a few miles off the coast of Sicily, closer to Italy than Africa, intimidated by hundreds of bombings, starving and unprovisioned, nearly ready, so far as the Axis leaders could tell, to surrender. Hitler and Mussolini had met on April 30 and set July 10 as D-Day for the final assault on that impudent little patch of dirt. That was now hardly more than two weeks away. There

would be just time — IF Rommel would call a halt to his operations and shift all his air power and other needed forces toward Malta. But that should not be. Here Rommel was poised on the final leg of a march that could virtually eliminate the British from the Middle East. Should such an opportunity be lost for a minor operation against a small island now ready to fall — and no earthly good to the British anyway, once his victorious panzers were clanking through the streets of Cairo and lining the banks of the Suez Canal? Unmindful of his own earlier warnings concerning the need for eliminating Malta, Rommel sat down and composed a message to be sent, not to his immediate Italian commander, but to Hitler himself. Mussolini would not dare to insist if the Fuehrer himself decided to change the time schedule and let one of his favorite commanders push on to Alexandria, the great British base, just a few miles away.

Thus are made, in the rush of the moment and by the advice of eager, ego-ridden battle commanders, decisions to come back later to haunt first the commanders themselves, and later the historians and strategists poring over the documents and endlessly wondering, “What if . . . ?”

To fully understand the events of that crucial summer of 1942 in the Mediterranean, one must be aware of the geography of the area and the history of the war in that theater. The Mediterranean was first of all a long naval battlefield with British power clustered at only three points: in the west end at Gibraltar, where Naval Force H was stationed; in the east at the fine harbor at Alexandria, not far from Cairo; and, finally, in one small island, Malta, nearly midway (both east-west and north-south) in the Mediterranean. Dwarfed by the neighboring island of Sicily, Malta could launch, at the beginning of the war, torpedo planes to range over a two-hundred-mile circle in the precise area where transports and supplies would have to pass should they take the shortest route from Italy to North Africa. And with the increase in the range of torpedo planes, this circle kept expanding until, by the end of 1942, it was eight hundred miles in diameter and covered all of Sicily, much of Italy, Sardinia, and North Africa, and even touched the western coast of Greece. By this point in the war, then, it was almost literally impossible for an Axis convoy to sail to North Africa without passing through this circle — without spending, in fact, the largest portion of its voyage within it.

But of course that worked two ways. Malta itself was extremely vulnerable to attack — especially to waves of airplanes attacking from the many airfields in Sicily. Whenever German airpower began operations against it, the island's use as an offensive base quickly diminished, and life on Malta was forced to become a life underground. And if it was to remain a point of British power, it had to be supplied regularly with

fuel and ammunition for the submarines, the planes, the ships, and the anti-aircraft batteries based there.

Malta's fortunes had risen and fallen with the British fortunes of war in the theater as a whole. When the power of the British navy seemed to rule supreme on the Mediterranean, Malta could be well-provisioned and used as an offensive base for deadly air raids, submarine attacks, and even surface-ship battles; but when the Axis air power increased and its army raced along the North African coast toward a beckoning Egypt, the ships had to leave, the submarines had to sneak in for rest and repair at night and remain submerged during the day, the planes so laboriously brought in were often destroyed on the ground before getting a chance at the enemy.

For the war in North Africa had indeed been a wildly shifting one. At first Italy had seemed to have the far superior force, overshadowing the puny British force of 30,000 men under General Wavell in Egypt. Yet the Italian force turned out to be a paper tiger, despite its vast numbers. Early in December, 1940, General Wavell's troops attacked. He had fewer than 225 tanks, far fewer than the Italians, but of far better quality. And in just two months his troops had advanced nearly 600 miles, defeating the Italians and chasing them past Bardia, Tobruk, Derna, and even Benghazi. His small force had captured 130,000 men and 400 tanks, at an astonishingly low total cost of 2,000 British casualties.

Just a month before, the British navy had had its own glorious victory. On November 11 the carrier ILLUSTRIOUS had sailed from Alexandria with 24 Swordfish torpedo planes. On the night of November 11-12, 170 miles from the base at Taranto where the Italian battleships were moored, the first of two flights of planes took off carrying torpedoes, bombs, and illuminating flares. At 2300 the first flares were dropped over the Italian fleet, and the planes maneuvered between barrage-balloon cables and dove in to drop their bombs and torpedoes. All aircraft except two had returned to the carrier by 0250. They had left behind three Italian battleships sunk: one out of action for the entire war, and two more that could not be raised and repaired for six months.

These were heady days for the Royal Navy, for the British Army, and for Malta. A year that had begun with defeat in Europe, had passed through the bombings of London and the specter of a German invasion, had finally ended in a glow of triumph. But events were to show it was a temporary glow only.

Hitler had decided that he would have to go to the relief of his over-extended partner, who not only had lost an army in North Africa, but had decided to invade Greece as well — with no more success. So the Tenth Air Fleet of the Luftwaffe was sent to Sicily,

and the bold tank commander who had led the way across France, General Erwin Rommel, was dispatched, with the beginnings of what was to become the Afrika Korps, to take command on the North African coast. And on March 31, 1941, he struck.

Wavell, never possessing much actual strength, had meanwhile lost most of what he had possessed. He had been asked to send a large part of his best troops, including armor, to Greece to stop an expected German invasion there. Most of his supply vehicles had been cannibalized in this attempt, and he was left with nothing to do but retreat — especially when confronted with an audacious commander of great tactical skill. In a very short time the formerly triumphant British army was racing back toward Egypt, losing tanks as they ran out of gas, and managing to hold Tobruk only by leaving a strong garrison there among its vast assembled stores.

And then the blow fell on Greece. In three weeks German troops had overrun the entire country, forcing the British soldiers to leave much of their armor and vehicles behind as they gathered on the beaches for a desperate rescue by the hard-pressed Royal Navy. The British troops and armor, which might have served so well in Africa, had done absolutely no good in Greece. And after a German paratroop attack on Crete had succeeded, there was nothing to show for the whole disastrous spring except huge losses in the Royal Navy for its desperate attempts to save the remnants of the stranded expeditionary force.

During these early days of the war, Malta had established itself as an important part of the British effort by its continued use as a base for attacks on convoys and shipping proceeding from Italy to Africa. Despite its own initial lack of preparedness in defense, especially in numbers of planes, it was able to continue servicing and repairing the submarines sent out to prey on both merchant and naval ships; its docks could be used for repair of surface vessels, and even serve, part of the time, as base for a smaller force of the Royal Navy. But although from the beginning Churchill himself had recognized Malta's importance for the British strategic plan, there was such a need for planes in England that for a time only a carefully measured few could be sent to the center of the Mediterranean. Nevertheless, as the war progressed, greater and greater efforts were made to fill this desperate need. A relatively safe means to deliver these planes was worked out, with carriers loading their decks with planes to be carried part way from Gibraltar, launched before passing through the narrow strip of water between Sicily and North Africa, and flown to the island under their own power.

Thus, although in April of 1941 the pounding of Malta from the air had so neutralized the island's offensive potential that only two per cent of the Axis supply shipping was sunk, and Rommel's force had been able to reach Africa intact, every time the air attacks eased up, Malta would once again make itself felt. By November of 1941, when the British were busy readying a new offensive against Rommel, the losses inflicted on both supply and naval ships of the Axis could not be ignored by the frustrated dictators.

On the night of November 7-8, for

example, an Axis convoy of seven merchant ships en route for Africa and guarded by cruisers and destroyers was intercepted by Force K (the surface ships based on Malta), which not only destroyed all seven, but a destroyer as well. And a second destroyer was sent down with a torpedo from a British submarine. On November 20 the same force attacked the escort of another convoy, torpedoing a cruiser and causing the entire convoy to be ordered back to port before it could be completely destroyed. Four days later the same Malta-based Force K intercepted another convoy and sank two ships. In fact, when the enraged Mussolini saw the total figures for the month, he saw that 70% of all his supply ships sent out had been destroyed. And it was clear that little Malta was, perhaps more than any other single cause, responsible for these tremendous losses.

Due in large part to this great loss of supplies intended for Rommel, the British felt they had gained enough advantage to take the offensive in the desert fighting. The British army had had the advantage of a long but relatively safe supply route — around South Africa and up through the Red Sea and the Suez Canal. Rommel himself was planning a new offensive, and when the two forces came together the tricks of the Desert Fox, while effective, could not counter the tremendous difference in supplies, and consequently the British finally relieved the siege of Tobruk and forced Rommel to withdraw, by January of 1942, to El Agheila. For a brief moment it seemed that the British had reconquered all their losses, shown their superiority to the great German tank commander, and reasserted British power throughout the whole Mediterranean. But this time, too, the great hopes quickly dissipated like a fading desert mirage.

Hitler and Mussolini had now both learned their lesson, it appeared, concerning Malta and the supply situation in the Mediterranean. Hitler, in a directive dated November 17, 1941, made clear his intentions for Malta. Field Marshal Kesselring was made Commander-in-Chief South; he would be provided with an entire new Air Fleet II from the Russian front, and he would be expected to "suppress" Malta, as well as take control of the Central Mediterranean Sea.

Meanwhile, despite the good news of the North African campaign, the British Navy was suffering a series of disasters. On 13 November a submarine torpedoed and sank the carrier ARK ROYAL 90 miles from Gibraltar. On the 25th another submarine dove under the screening vessels and put torpedoes into the battleship BARHAM, which sank within ten minutes. And then, on the 21st of December, all three cruisers of the Malta force ran into mines — one cruiser and an accompanying destroyer went down; the other two cruisers were badly damaged and had to be taken out of action. And this happened just a day after six brave Italians had maneuvered three piloted torpedoes into the Alexandria harbor and altered the entire naval situation in the Mediterranean by sinking the two remaining battleships there (QUEEN ELIZABETH and VALIANT). Thus, in the eastern Mediterranean, the British were left with no carriers, no battleships, and only three light cruisers as "heavy" ships. The entire naval struggle in the area now would have to fall on destroyers and submarines

alone. And although the two British battleships had been sunk in shallow water, it would be a very long time before either could be raised and repaired. So desperate was their situation that the British tried to conceal the losses — but by late January they had become generally known.

The supply situation for the Axis began to change immediately. Shortly after an affair called the "First Battle of Sirte," Mussolini had complained to Hitler that, although the Italians had managed to get four supply ships through to North Africa, they had had to use 100,000 tons of warships to protect 20,000 tons of supply ships. It had been tremendously costly in fuel for such an armada to protect only four ships, and shortage of fuel was one of the big reasons the larger Italian ships had thus far been seldom used in combat operations. But now with the increased attention to Malta, and the weakened position of the British Navy in the area, the Axis shipping losses began to decline dramatically. And by the beginning of April, Kesselring was ready with even stronger medicine for Malta.

With 2,000 planes under his command, the Field Marshal determined to completely devastate the small island with nearly continuous bombing raids. During one month alone his planes dropped 6,700 tons of bombs, concentrating most of it on the harbor installations. Those ships that could get out had to leave. Those that could not, could not stay afloat long — destroyers, mine-layers, submarines were sunk with relative ease. The entire island, even the city streets, was becoming a mass of debris. And by his target date of May 10, Kesselring felt the island had indeed been "suppressed." To finish it off, an airborne invasion, supported by a naval landing, was planned — first for June, but later postponed until July.

By this time Rommel had broken loose again. In late January in fifteen days he had pushed all the way back to El Gazala, not far from Tobruk. There, receiving supplies regularly now (in January not a single supply ship had been lost), he could rest and prepare for his next step.

Malta itself had received four supply ships in January; after that another attempt had been made to run a convoy in, but all the supply ships had been sunk. From that point on there had been virtually nothing. All supplies were running low, and even provisions to keep the population from starving had shrunk so far that the leaders were beginning to count the number of weeks they could continue. Malta could do almost nothing to prevent what was about to happen in Africa.

During the evening of May 26th, the Afrika Korps gathered its forces for the assault; the next morning they attacked. There followed the lightning success described at the beginning of this account — and by June 21st Tobruk, with its storehouse of supplies, was Rommel's nearly intact, and he was anxious to continue the battle straight to Alexandria.

This was one of those moments of decision that strategists hope for and at the same time dread. One can rarely do everything one wants to do on all fronts. Choices must be made. There are never "enough" resources. The decision, whatever it is, must take from one operation to give to another. And the "leader" must choose which Peter is

to be robbed to pay which Paul.

Malta had been effectively suppressed for months — yet some Axis commanders felt it must be eliminated by invasion if the supply situation in North Africa was not to be continually endangered. The troops, the planes, the ships had already been committed for that invasion, and they were ready or gathering. The plans had been made, the day set. The Italian Navy, starved for fuel by Hitler during the course of the war (their only fuel supplies came from the German Fuehrer) was at last about to be given a major role and the capability to carry it out. The German planes were also committed. They could easily be pulled from supporting Rommel and shifted north the few miles necessary. A brief, perhaps costly campaign, and then it would be over, and never again would the Axis be faced with the inability to supply their African troops — all because of that dirt-covered rock in the Mediterranean.

Was that the way to go?

But there was Rommel, breaking loose and racing nearly all the way to Alexandria. One more little push, while the great commander and his desert troops were high from their remarkable successes. Perhaps that would be just the amount necessary to lead to a breakthrough — a British rout to Alexandria and out into the open again. And then British power would be truly broken. They might defend their "tight little island," but their great empire in the Middle East would topple like nine-pins.

Hitler was indeed between a rock and a hard place.

But that little voice of reason-blinded-by-hope spoke up: if you give everything to Rommel, he can break the back of British resistance. And then the whole strategic situation will change. There will be another route to the Caucasus oil, another last-minute disastrous pull-out for what will be left of the British troops. And this time they will be too far away to be brought home on sailboats and private yachts. They will all be in the bag.

Hitler did not hesitate. It would be Rommel. All supplies available would be rushed to him. The enthusiastic commander would be given his head. Malta would have to wait. If Rommel could do what he had said he could, Malta wouldn't matter. It was nearly starved out, anyway.

And so the word was rushed to Rommel. He could attack, finish his enemy off. He would be supported, troops and planes diverted to him as necessary. Mussolini had agreed. What else could he do? Without Hitler's help, he didn't even have oil to fuel his fleet. Besides, the Duce would like to go to Africa in triumph when the British finally were humiliated and their place taken by the Italians — and Mussolini himself.

Rommel's attack at first succeeded as he had expected. By June 27th he was beyond Mersa Matruh. At the end of June he was at El Alamein, where the British had stopped their retreat and establish a defensive position. Alexandria was hardly 60 miles away. So close — and yet, as events would soon prove, so very far.

The Field Marshal did not pause but immediately attempted an attack on the British positions. Yet his exhausted forces could not break through. Then, on July 3rd, he tried again, throwing everything he could into the attack. Once again it failed. Finally,

facing the fact that he would have to await reserves and reinforcements before crossing those crucial 60 miles, Rommel went on the defensive.

Rommel called for his reinforcements. They were sent — among them, airborne regiments from Sicily, where they had been waiting to take part in the planned invasion of Malta. The die had been truly cast; Malta would no longer be considered to have priority. Rommel's operations must take precedence.

Meanwhile, Malta had been having a change of fortune also. Knocked to her knees in the terrible six weeks of air bombardment in April and May, she had begun to recover even while the bombardment was on. The day before its formal lifting on May 10, 60 Spitfires had been flown in to Malta from the decks of the British carrier EAGLE and the American WASP. Other planes had been flown in by the same method earlier, but the island had not been well prepared to receive them and many had been destroyed on the ground.

This time the islanders were ready. Some of the planes were in the air within 35 minutes after landing, taking part in the defense against the bombing raid in progress. (The result was 12 attacking German planes lost for only 3 Spitfires.) No longer could German planes fly in at will and make the citizens suffer with no hope of making the attackers pay. More Spitfires were coming in all the time. And when, in July, the Axis decided that the bombing of Malta must be resumed, that island was already sufficiently restored to make the enemy pay dearly for every bomb he dropped. The July "suppression" turned out to be a flop.

But there were other problems on Malta. It could not be restored as an offensive base until it could be supplied more regularly. After devastating losses in the early spring, the British had decided to call off further supply convoys until they could be better protected from the air. Yet supplies were so low that something had to be done if the island was not to surrender. It was decided, therefore, to make a desperate double attempt to run the gauntlet again — from both ends of the Mediterranean at the same time.

The plan was to send from Alexandria a convoy of ten supply ships, escorted by seven cruisers and almost three times that many destroyers (as noted above, there were no longer any serviceable battleships or carriers left in the Alexandria fleet). At the same time a convoy, including six supply ships, would be sent from Gibraltar. There would be an escort of cruisers and destroyers for this group also; furthermore, they would be covered by Force H, a group of heavier ships which would include two carriers and a battleship.

The Italians placed priority on destroying the convoy from Alexandria. Thus they dispatched two battleships, four cruisers and three whole divisions of destroyers to attack it; in addition, they concentrated heavy air attacks against it. Ninety planes attacked it on June 14, sinking one supply ship and damaging another. On the 15th the losses began to pile up. One cruiser was sunk by a motor torpedo boat, and a destroyer went down from a submarine's torpedo. Shortly after, a second cruiser was hit and damaged. At this point the commander learned of the

heavy Italian surface fleet ahead of him. He quickly pulled back and asked for air attacks to even the unbalanced odds against his force. Although a battleship was hit and damaged in these attacks, it was able to proceed in the action against the convoy. One cruiser was damaged enough to be taken out of the action and was later sunk by a submarine. Yet Axis planes returned to renew their attack and two British destroyers were sunk. Warship losses were piling up, anti-aircraft ammunition was running low, and the large Italian surface fleet had not yet been encountered. The convoy commander decided he would have to cut his losses and return to Alexandria. Thus, not one supply ship from this convoy made it through to the nearly starving Malta.

The convoy coming from the west was also having heavy slogging. Air attacks on the 13th and 14th had been nearly continuous, but only one cruiser had been forced to drop out to return for repairs. On the evening of the 15th the heavier ships of Force H turned back to Gibraltar as they were accustomed to do when reaching the narrow waters between Sicily and Tunisia. The convoy would have to run the rest of the way with only one light cruiser and nine destroyers as escort. And yet they had to face another Italian surface fleet — smaller than the one sent east, but still much superior to the small British force.

On the morning of the 15th, the Italian ships made contact and immediately attacked. The British warships gamely advanced to meet the threat, sending the vulnerable supply ships away to the southwest. The action between the surface warships was almost foreordained. One British destroyer was sunk and another damaged before they could turn away. Nevertheless, the supply ships had been temporarily saved. They were soon to be attacked by aircraft, however, and three more of the cargo ships went down.

What was left of the convoy finally arrived at Malta after dark — but there was more loss to come. Running into a minefield, one destroyer was sunk and two more, along with a minesweeper and a supply ship, were damaged.

The end result of all these losses from two separate convoys, therefore, was the arrival in Malta of only two supply ships. Nevertheless, so great was the need for supplies on Malta that even this slight success was significant. For it enabled the island to stretch out for a few more weeks the day on which it would be forced to surrender, if more supplies could not be obtained. So as it turned out, this "Italian victory" was, in a strategic sense, rather a victory for the British.

Malta was indeed reviving. First had come the Spitfires flown in from the American and British carriers. By July 12th the channel had been cleared of mines and submarines were again operating from their old base. How effective they were to be was seen by the fact that, during the next month, 34% of the supplies intended for Rommel were sunk en route. And it was not long before surface ships were again using Malta for a base.

Meanwhile, help that would make a big difference to life on Malta was being planned. The long-suffering citizens of that island, emerging cautiously from their bomb

shelters deep down in the rock, could not of course be told, but on July 24th the decision was made by the British and American leaders to invade North Africa in the west. When that invasion took place, a whole new situation would be created, with tremendously increased naval and air forces driving the dreaded German bombers from the skies. And the Desert Fox, despite all his clever stratagems, would be boxed in from front and rear.

But that was in the unknown future. For now there were more desperate problems. The two ships in June had saved the island and its population. But now supplies were again growing very short, and once again the commander of the island had figured out to the exact day how long he could ask the people to go on without additional supplies. The British leaders outside knew the situation too, and they finally determined to try again, with a far greater escort than had ever been employed in the Mediterranean before, to run the gauntlet with another supply convoy. It was called the "Pedestal Convoy," and it has gone down in naval history as one of the heroic exploits of British sailors and merchant seamen.

The convoy was formed at Gibraltar. It consisted of eleven cargo ships, escorted by no fewer than four carriers, seven cruisers, and twenty-five destroyers. By August 11th they were under attack by Axis forces. The submarines were there first, and they took a costly first-blood, sinking the carrier EAGLE. Then there followed, in the next two days, wave after wave of German and Italian planes rushing to the attack. A second carrier was hit by three bombs and had to turn back. At the end of the day of August 12th the main escort's work was done and it turned back for Gibraltar as the cargo ships

entered the narrow waters between Sicily and Tunisia. They were now shepherded by a mere three cruisers and ten destroyers. That night Axis submarines surfaced and sank the cruiser CAIRO and four cargo ships. Then motor torpedo boats joined the attack and sank a tanker and more cargo ships.

The next morning more planes appeared. But by evening two cargo ships had made it through to Malta. Later there arrived another cargo ship and one priceless oil-laden tanker, the OHIO, heavily damaged and given up for lost time and time again. But always the desperately working, exhausted sailors returned to attach new tow lines, moving ships alongside to keep the tanker afloat, dragging, pushing, and almost literally holding up the badly damaged ship until it was safe in harbor. It had been a very costly operation for the British navy. But Malta, whose commander had already picked his "surrender day" if supplies did not appear, could relax for a moment of satisfaction. The bitterly-fought-over remnant of the convoy had arrived just four days before the commander's "surrender day." There were now supplies and fuel enough to last until the Mediterranean could once again become a British sea.

And now Rommel, realizing that his Fuehrer had placed all the stakes on the invincible Desert Fox and his promise to push through to Alexandria and beyond, perhaps feeling the first twinges of doubt that he could carry out his prediction, made a last desperate effort. On the night of August 30-31, despite his complaints that no longer were sufficient reinforcements and supplies getting through to him, he attacked the left, center, and right of the British line at El Alamein. It was the usual Rommel attack, with the 15th and 21st Panzer and

90th Light Divisions trying to make an end run around the left of the British while the other forces made feints or holding attacks. Montgomery, now in command of the British Eighth Army, had purposely refused his left flank, drawing it back into an "L" shape. Thus, when Rommel moved in and turned north to come in behind the British forces, he was opposed by an impassable line of anti-tank fire, aided by close-support air attacks. The Desert Fox was out of tricks, low on supplies, and before long would be out of Africa.

For when Montgomery was ready to attack in October, his army had been supplied far beyond anything it had had in the past. Supplies and reinforcements had been coming in a solid stream around the Cape of Good Hope and up the Suez Canal, while Rommel's still had to run the gauntlet of British air and sea power in the Mediterranean — aided and abetted by that piece of rock, bristling now with offensive weapons, which the Field Marshal had begged Hitler not to invade, so that the desert attack might proceed. Montgomery had 150,000 men to Rommel's less than 100,000. And while the Axis forces had between 500 and 600 tanks, half of them were Italian, and thus much inferior. The British had 1114, including nearly 400 Grants and Shermans.

The battle could be dragged out for some time — even after the American and British landings in November in northwest Africa. But with the heavy supplies pouring in to the Allies, and very little getting through to Rommel's forces, there could be little doubt how it would end.

And right there in the middle of the final act, effective again in preventing supplies from reaching the Field Marshal, was that damnable pile of rock — Malta, now fully recovered, well supplied and dangerous as ever.

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